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ABSTRACT

Fifty-nine Mexican-American families, each with a child between age 5 and 9, participated in a study to determine whether paternal proximal behaviors related to child ability and achievement. Proximal behaviors studied were: (1) teaching strategies; (2) language in literacy related activities; (3) involvement level in childcare; and (4) select gender-specific behaviors. Additionally, the study examined associations between acculturation level and proximal paternal behaviors. Instruments used were the Parent Background Form (PBF), the Cognitive Home Environment Scale (CHES), the Peabody Picture Vocabulary Test (PPVT), and a revised version of the Maternal Teaching Observation Technique (MTOT). In addition, primary teachers rated children for classroom performance and academic potential. To study father-child interactions, research assistants videotaped fathers teaching their children on a model assembly task. Interviews with mothers identified childcare responsibilities in the home. Results showed that fathers who incorporated independence training in their teaching approach and used English in literacy-related activities had higher rated children. No significant differences were found in involvement level with respect to father level of acculturation or in teaching approaches with respect to gender. Among the implications of the study are the following: (1) future research should account for paternal as well as maternal influences when assessing home environment variables; (2) teaching methods in school should complement paternal methods; and (3) parental behaviors which promote child self-efficacy should be encouraged. Study limitations are described; they concern sample size and selection, validity of the instruments, and the nature of the father-child task. (KS)

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UNIVERSITY OF CALIFORNIA
Santa Barbara

The Effects of Paternal Teaching Strategies, Childcare Involvement, and Select Father-Child Variables on the Academic Performance of Mexican-American Children

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Education
(Counseling Psychology)

by

David Arthur Strand

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David Arthur Strand

DEDICATION

This dissertation is dedicated to my wife, Jennifer Hildreth Strand, and to the memory of my grandfathers, Tonder B. Strand and Lawrence Lurker. To Jennifer, for her unwavering faith, love, encouragement and companionship. To Grandpa Strand, for his example of courage, hard work and perseverance. And to Grandpa Lurker for his shining example of devotion, sacrifice, and his lessons on how to embrace life.

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editing and personal involvement in this project helped transform a vague notion into a clear reality.

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ABSTRACT

The Effects of Paternal Teaching Strategies, Childcare Involvement, and Select Father-Child Variables on the Academic Performance of Mexican-American Children

by

David Arthur Strand

The general purpose of this study was to investigate whether paternal proximal behaviors of teaching strategies, language in literacy-related activities, involvement level in childcare and select gender-specific behaviors varied within a sample of fifty-nine Mexican-American fathers. Additionally, associations between acculturation level and proximal paternal behaviors were examined, to better understand how fathers' roles are influenced by cultural adaptation.

Fifty-nine Mexican-American families from low-income neighborhoods in Santa Barbara, California agreed to participate in this study. Each of the families was intact, and had a child between age five and nine for whom school performance measures were collected.

Each parent participated in an interview sessions in their own home, in their preferred language conducted by a same-gender bilingual graduate researcher. Mothers were asked to identify childcare responsibilities in the home.

Fathers were administered the Parent Background Form (PBF) and the Cognitive Home Environment Scale (CHES). Children were administered the Peabody Picture Vocabulary Test (PPVT). In addition, primary teachers provided ratings of childrens classroom performance and academic potential.

To study father-child interactions, fathers were asked to teach (ensenar) their child in any way they chose on a model assembly task. Videotapes of these interactions were coded using a revised version of the Maternal Teaching Observation Technique (MTOT), in an effort to identify discernable patterns of teaching.

Results of the study establish that wide variations exist between fathers in their teaching approaches, participation in and language used in literacy-related activities with their children, and involvement in childcare, with links to father acculturation level. High acculturated fathers used mainly verbal means of teaching their children, while low acculturated fathers relied heavily on visual demonstration. Split-median analysis was conducted on father teaching patterns of verbal, visual, and independence training (a measure of how controlling fathers were in the task). Six distinct paternal teaching profiles were identified. Children

associated with each paternal profile were compared in terms of their verbal intelligence and school performance ratings. While parity existed in verbal intelligence across groups, significant differences were revealed between child groups on teacher ratings of school performance and academic potential. Fathers who incorporated independence training in their teaching approach were associated with highly rated children, while fathers who were highly active in the task were associated with lower rated children.

Large variations existed in terms of father involvement in childcare activities in the sample, however no significant differences in involvement level was observed with respect to father level of acculturation. While no significant gender-specific differences in teaching approaches were found, fathers were more supportive and less demanding in the task with daughters than with sons, and provided less independence training to their daughters. Female children in this way may receive implicit messages from their fathers that they are less capable.

Results of the study were discussed with an emphasis on potential links between independence fostering

behaviors on the part of fathers and their child's sense of self-efficacy. The implications of the high within-group diversity found in fathers in the sample were considered, along with the need to move beyond limited and stereotyped views of Mexican-American fathers and recognize the contribution they have in their childs' social and cognitive development. Limitations of the present study were discussed, and suggested directions for future research were presented.

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CHAPTER I

Introduction

Statement of the Problem

A persistent and elusive problem in the United States has been the continued unequal representation of specific ethnic minority groups in arenas of success, as defined by mainstream society. Results from the U.S. Census provide clear and sobering evidence of this disparity as it pertains to Mexican Americans, an ethnic group that if current patterns of migration and family size are maintained will soon be the largest minority in the country (DeAnda, 1982) . As a group, Mexican Americans hold less desirable jobs, bring home a lower income and have less education than their Anglo and black counterparts (U.S. Census, 1980). These findings are consistent with voluminous evidence linking education level to income level and occupational status across all subgroups of our population. Clearly, socioeconomic inequities that exist in our society are perpetuated by the lack of education endemic to the socially disadvantaged (Carter & Segura, 1979).

The statistics are grim - Mexican-American children as a group have not been performing as well or

persisting as long in the educational system as the "average" child, as identified by national norms (U.S. Census, 1980). Reports that by age two and a half, Mexican-American children already lag behind non-Hispanic children in verbal and quantitative abilities (though not in reasoning or motor performance) provide graphic evidence that these children are at a disadvantage when they enter the school system (Laosa, 1984). This same system has failed to mitigate initial performance disparities, and may in fact perpetuate them. Deficits in school-related abilities of Mexican-American children become more pronounced as they advance in grade (Garrison, 1972; Hunt, 1975). Related to evidence of poor school success is a correspondingly high attrition rate. In Texas, for example, only 60% of all Mexican-American students complete high school, compared to an Anglo rate of 86% (Evans, 1974). This finding is indicative of attrition patterns throughout the southwest (Carter & Segura, 1979). Given these statistics, it is not surprising that Mexican-American youth are the most underrepresented subgroup of all major minority groups in secondary and college institutions (Casas & Ponterrótto, 1984). By not penetrating academic arenas, patterns of

economic and social inequities are perpetuated and continue to be experienced by a large majority of Mexican Americans (Carter & Segura, 1979).

Scores of projects have successfully identified educational attitudes and policies that help maintain the current inequitable status quo (Alejandro, 1979; Heller & White, 1975; Laosa, 1977). Practices under fire include selective teacher inattention to children of color (Good, 1970), de facto segregation into schools that have poorly qualified teachers and inferior facilities (Carter & Segura, 1979) and insensitivity to handicaps caused by a lack of exposure to English (Evans, 1974).

Research targeted towards understanding causes of and providing remedies for educational disparities has also focused on parental and home environment variables. In fact many investigators, while acknowledging the importance of rectifying prejudicial educational policies and attitudes, have now directly linked specific parental behaviors and factors in the home environment to variances in achievement and intelligence measures in children (Johnson, 1980; McGowan & Johnson, 1984). It is difficult to discount the observation that "the most consistent, intense and pervasive influence in life comes

from parents" (Johnson, 1980; p. 3). Variables such as how often parents engage in direct teaching (Radin & Russell, 1983), the types of teaching behaviors they employ (Laosa, 1980), the age at which they allow children to make autonomous decisions (Anderson & Evans, 1976) and the affective relationship between parent and child (Radin & Epstein, 1975) have all been posited to influence children's social and cognitive development directly. In addition, variables in the home environment (such as number of books and educational materials available) have also been touted as indirect influences of child cognitive development (i.e. Russell & Radin, 1983).

Developers of educational intervention programs have taken heed of these findings and a shift in emphasis from "teacher-training" to "parent-training" intervention formats has occurred (Johnson, 1980). Results of this shift are promising. While both types of programs have produced short-term increases on IQ scores (i.e. Gray & Klaus, 1970; Schaefer, 1976) only parent-trained programs have successfully maintained initial gains over time (Madden, Levenstein & Levenstein, 1976; Schaefer, 1970). It does appear that targeted modifications of home

environment variables and parent-child interaction patterns may promote child cognitive development in ways that improve their chances of succeeding in the classroom (McGowan & Johnson, 1984).

Mothers have traditionally taken on the role of prime caretaker in our society and have been the main provider of their childs' physical needs (Bowlby, 1970). Consequently, it's been assumed that mothers exert the most significant influence on their childs' cognitive development as well (Hess, 1970). Mother-child interactions have accordingly been examined from a multitude of approaches in efforts to tease out factors that may be tied to measures of child achievement or intelligence (McGowan & Johnson, 1984). In comparison to mothers, the role of fathers in their childs' cognitive development has been given only cursory attention (Lamb, 1976). This is no doubt in reaction to consistent evidence that fathers tend to be much less active than mothers in school-relevant activities such as reading to their child, and teaching their child to read, write, and count (Bronstein, 1984). However, these studies were largely conducted on traditional families where fathers worked full-time and mothers were not employed (Ricks,

1985). With the recent "blurring" of traditional maternal and paternal roles, the role of the father is currently being reexamined and his impact on his children reassessed (Bronstein, 1984). This renewed line of research has produced remarkably consistent evidence that fathers do apparently impact upon their childrens' development in unique and powerful ways (Sagi, 1982). In measures of social development (Sawin & Parke, 1979) and aspects of cognitive development in children (Radin & Russell, 1983) scores have been positively associated with specific paternal behaviors and father-child interaction patterns.

While promising, investigations of paternal influences to date have not yet produced enough field data to be considered reliable. The vast majority of these efforts have focused exclusively on white, middle class fathers and their children (Lamb, 1975). Consequently, it is not known to what extent, if any, emerging evidence of fathers and their influence can be extended to blacks, Hispanics, and other minorites.

The Mexican-American father in particular has been consistently stereotyped as an authoritative and aloof figure who contributes little to his children's learning

process (Mirande, 1979). This stereotyping in effect creates a vicious circle - since it's assumed that Mexican-American fathers do not significantly interact with or influence their children, researchers in turn ignore them. In lieu of any reliable data to the contrary, stereotypical views persist.

The general purpose of the present study is to achieve a more accurate understanding of the role of the Mexican-American father in his family structure, and his contribution to his childrens' cognitive development. To this end, several lines of investigation are carried out. First, the impact of acculturation on paternal involvement in childcare, level of home cognitive stimulation and teaching behaviors fathers employ with their children are examined. Associations between these variables and child performance measures are a primary focus of this study. In addition, the language fathers' use with their child in literacy related activities is investigated and associated with measures of child performance. Finally, paternal behaviors in teaching and home cognitive stimulation situations are observed with respect to child gender.

Review of Related Research

This review will cover a wide range of research pertaining to two main areas. The first area includes a general review of several variables posited to influence school performance and cognitive development in educationally disadvantaged children. These will include selected categorical or "distal" measures of a) acculturation level, a composite measure that includes language (use of Spanish, English or both), number of years in the United States (generational status), and years of education; b) socioeconomic status, generally defined as income level and status of occupation; and c) family size and constellation (i.e. birth order, age differences between siblings) variables. Promising "proximal" variables (behaviors that are observable and measureable) will also be reviewed, specifically a) parental teaching strategies; and b) selected home environment variables.

The second area will focus specifically on the father, with special attention given to the Mexican-American father. Current evidence about his influence in the family and associations between his

behaviors and child performance criteria will be examined. The changing role of the Mexican-American father in childcare activities and its ramifications will be explored. In addition, research examining differences in paternal proximal behaviors with respect to child gender will be covered.

Distal Variables Associated with Child Outcome Measures

The identification of factors and behaviors that are associated with school-related abilities has been of long-term interest to educational researchers as well as economists and sociologists (Bridge, Judd & Moock, 1979). This interest has risen in intensity since the 1960's, due in part to the consciousness raising results of the civil rights movement (Ramirez, 1973). National census data makes it clear that individuals of color in our culture are overrepresented in lower socioeconomic classes, and the main differentiator in this regard appears to be education level (Olivas, Brown, Rosen & Hill, 1980; U.S. Census, 1980). In response to overwhelming evidence that Mexican American and other ethnic minority children underachieve as a group in the

classroom and drop out of the educational process early (Hirano-Nakanishi, 1986) a significant amount of research has been directed toward identifying factors that influence academic performance in disadvantaged children (i.e. Anderson & Johnson, 1971; Henderson & Merritt, 1968; Hess, 1969).

Until recently, most research was concerned with categorical, or "distal" indices that looked at societal indices and how they interfaced with measures of academic performance (Valencia, Henderson & Rankin, 1985). Three of these distal factors that have historically attracted the most research attention are: acculturation level, socioeconomic status, and family size/constellation factors.

Acculturation level in Mexican-American individuals has been empirically shown to be comprised of several factors. These include language preference, generational status, ethnic identity, ethnic origin of peer group, and ability to read/write in Spanish or English (Montgomery & Orozco, 1984). Highly correlated with these indices of acculturation are years of parental education (Laosa, 1982a). Most studies report that highly acculturated and educated Mexican-American parents

tend to have children who do better at school and score higher on cognitive development measures (Hess, 1970; White, 1982). Acculturation level has been linked to cognitive orientations, with less acculturated individuals more apt to be "field dependent", while more acculturated individuals are progressively more field independent (Laosa, 1980). This measure relates to how individuals take in and organize information when solving problems, with field dependent individuals bound more to the context of a presented problem and therefore presumably less able to use analytical abilities (Witkin, Moore, Goodenough & Cox, 1977).

Efforts to link acculturation and cognitive orientation with Mexican Americans, however, have not produced reliable results. Gonzales and Roll (1985) found that cognitive orientations of Mexican Americans did not vary with acculturation level. While performance deficits were tied to acculturation level, the effects were due to poor verbal skills and not analytic abilities or cognitive orientations (Gonzales & Roll, 1985). Nor is it clear that there is a linear relationship between acculturation in Mexican-American families and academic achievement. For example, one long term study found that

while second generation Mexican-American children show expected gains in educational and occupational achievement, third generation children may actually regress academically in comparison (Buriel, 1975). Radin (1976) speculates that changing family roles and frustration over societal barriers may lower parental aspirations, which in turn influences efficacy and motivation in their children. Overall, attempts to draw a direct link between acculturation level of children and their performance have been fraught with inconsistancies and contradictions, and this distal measure does not appear to be a useful predictor in this regard.

Socioeconomic (SES) level is another distal measure comprised of income level and occupational status, which is also highly correlated with and sometimes incorporates educational level (Laosa, 1982b). This indice has been a popular one for researchers who often report that high SES parents have children who perform relatively better on ability and intelligence measures (i.e. Brophy, 1970; Oakland, 1978). However, a meta-analysis of the research linking SES and achievement found only mild positive correlations between them (White, 1982). Moreover, it is difficult to assess the

impact of socioeconomic status because researchers have used a variety of different indices to measure it. (see Laosa, 1982b). In studies that focus on Mexican Americans in particular, many confounding variables such as language, acculturation level, and ethnic identity need to be accounted for (Valencia, Henderson & Rankin, 1984). Researchers are now steering away from this global construct and are beginning to pay attention to observed variations in parent-child and family interactions within identified economic and occupational groups (Bradley, Caldwell & Elardo, 1977; Henderson, 1981).

Family size and birth order have also been characterized as contributing influences in childrens' cognitive development. Larger families and closer sibling spacing have been seen as having a negative impact on child development and therefore performance (Zajonc & Markus, 1975). Results from certain multiple regression studies indicate that family size and constellation patterns covary with low SES and low acculturation, but may be responsible for unique, small variations in child intelligence measures (Henderson, 1981; Valencia, Henderson & Rankin, 1981). However,

other studies have failed to find a relation between intelligence and family constellation (Laosa, 1984; Steelman, 1985) casting doubt upon whether there are viable links between these variables.

In general, attempts to build causal models tying distal measures such as family size, acculturation and socioeconomic status to child outcome measures haven't fared well statistically (Bridge et al, 1979). It's becoming increasingly clear that distal measures of influence are too "rough" as they reveal little about specific behaviors and interaction patterns that exist within family settings. While distal factors have fallen into disfavor, interest in observable proximal or "near" variables that can describe specific parent, child, parent-child interaction, and home environment variables in detail has peaked (Valencia et al, 1985). Proximal variables consist of actual behaviors that can be observed and potentially modified. These variables may provide valuable data for educators and point toward concrete ways to effectively intervene and help prepare children to succeed academically.

Proximal Variables Associated with Child Achievement

How mothers teach their children in learning situations is probably the most thoroughly researched proximal variable to date. It is easy to understand the allure this area of investigation holds for researchers. In theory home teaching strategies that closely match classroom teaching methods should be advantageous to children, in effect "prepping" them for the demands of school (LeVine, 1980; Laosa, 1982a). Poor matches between home and classroom teaching styles may have the opposite effect. For example, a child taught through visual demonstrations at home and then exposed to teachers who predominently use verbal descriptions may have difficulty translating classroom information in a meaningful way (Bandler & Grinder, 1975).

Classical studies by Hess (1969) and Buriel (1975) reveal that interactions in Mexican-American families vary markedly and are in no sense homogeneous. Yet virtually all research on Mexican American teaching patterns has been comparative in nature. Typically, researchers have looked into between group differences in teaching behaviors of Mexican-American and Anglo mothers, ignoring the wide diversity <u>within</u> each group (Padilla & Lindholm, 1984).

One clear trend has been reliably identified and replicated from comparison studies of this type. Mothers with more education/acculturation use more verbal behaviors (such as praise, commands, questions) in teaching their children than do mothers with less education/acculturation. These latter mothers, who are overrepresented in minority families, rely heavily on nonverbal behaviors such as physical demonstration (i.e. modeling) in teaching their children (Laosa, 1982b). It has been assumed that a verbally based teaching style creates "demands" that closely parallel the demands of a classroom and therefore helps prepare children for success in school (LeVine, 1980). However, results from an initial attempt to regress maternal teaching strategies on school related outcome criteria in children brought some surprises. Laosa (1982b) reported that maternal modeling, not verbal behaviors, was positively associated with three-year olds' intellectual development. If replicable, this finding has important implications for educators, as it suggests that developmental/age considerations need to be taken into account in efforts that attempt to associate parental teaching styles with child outcome measures.

Other efforts to gauge proximal factors and their impact have focused on the amount and quality of cognitive stimulation available to children in the home environment. Measures of home environment have concentrated on direct interactive behaviors of parents related to literacy and numeracy (i.e. how often parents read to child, teaching child to count, write, read) and indirect factors that may affect cognitive development (i.e. number of books, educational materials, magazines available to child). High levels of home cognitive stimulation have been positively linked to acculturation indices in families as well as positive child outcome measures (Henderson & Merritt, 1968; Laosa, 1982a; Radin & Russell, 1983). An environment that provides high cognitive stimulation has been referred to as a "hidden curriculum" that may help prepare children who are advantaged in this way for success at school (Sonquist, Sonquist & Wolf, 1975). Valencia et al (1985) recently regressed distal and proximal variables on children's intelligence measures and found that a factor consisting of home environment variables accounted for three times the variance of any other factor. However, other studies involving Mexican-American families have been unable to

find significant links between levels of home cognitive stimulation and child measures of performance McClintock, 1981; Ponterotto, 1985).

The influence of language presents another complication that must be accounted for in research pertaining to Mexican-American children. Up until 1968, educators adhered to the "sink or swim" policy of placing students with varying degrees of familiarity with English in the same classes as native speakers (Valdevieso, 1986). This policy proved disastrous and federal legislation was passed to insure that bilingual education programs were made available until children reached an acceptable degree of competency in English (Valenzuela de la Garza & Medina, 1985). Debates rage on as to the efficacy of these programs, but it has been consistently demonstrated that familiarity with English is positively linked to verbal intelligence scores and possibly to achievement and classroom performance measures in Mexican-American children (Laosa, 1982a; McGowan & Johnson, 1984a). Children exposed to two languages have been consistently shown to score lower in verbal intelligence measures than monolingual children (Ianco-Worrall, 1972; Lambert, 1978). Dual exposure to

two languages may translate into lower verbal intelligence in both, as a result of less opportunity to master the vocabulary of either (Ben-Zeev, 1977). Interestingly, some studies have tied poor English skills to deficits on measures of verbal intelligence, but not to measures of classroom performance, which begs the question of whether intelligence instruments in general are unfairly biased toward native speakers (McGowan & Johnson, 1984b). All in all, Mexican-American children would seem to be significantly disadvantaged in terms of school preparedness if they are predominantly exposed to Spanish in the home, a disadvantage that may only be mitigated slowly through bilingual education programs (Nielson & Fernandez, 1981).

While the shift toward researching proximal behaviors has continued to gain momentum, efforts that attempt to map specific parental behaviors directly to child outcome measures has earned its' share of critics. It's been pointed out that most attempts to regress proximal variables on child cognitive measures have not accounted for parental intelligence (Scarr & Weinberg, 1978). Scarr (1985) cautions that parental intelligence may be an unmodifiable distal variable that interacts

with both observed proximal behaviors and child outcome measures. She castigates studies that envision proximal behavior changes as "the" answer to changing societal inequities (Scarr, 1985). Taking up the challenge, many studies are now beginning to include distal measures such as parental IQ in their analyses of parent-child interactions and are continuing to find significant proximal effects (i.e. Estrada, Arsenio, Hess & Holloway, 1987).

Paternal Variables Associated with Child Aptitudes and Performance

Attempts to pinpoint the respective influence that mothers and fathers have on their child tends to perpetuate the notion that these influences are separate and distinct, which is an oversimplification (Laosa, 1980). With this qualification, it is still useful to examine roles fathers and mothers tend to occupy, and how they may seperately and conjointly contribute to the home learning environment. Maternal roles and behaviors have been extensively studied, but relatively little is known about paternal roles and behaviors in the family system (Lamb, 1976). The Mexican-American father in particular

has been patently neglected by researchers (Buriel, 1975) and consistently stereotyped as a unidimensional, uninvolved family figure (Mirande, 1979).

Fathers have generally been assumed to play only a secondary role in their childs' cognitive development (Lamb, 1976; Laosa, 1982a). This designation made sense when one considers the fact that in the past mothers' generally took on the role of prime caretaker (Johnson, 1981) and spent much more time with their children on a daily basis than did fathers (Rebelsky & Hanks, 1971). However, there is now ample evidence that father's contributions are apparently critical in several respects. Traditional maternal and paternal roles are blurring, with women returning en masse to the workforce (Barnett & Baruch, 1987) and fathers becoming increasingly involved in childrearing activities (Pleck, 1979). Fathers' spend more time with their children "one on one" then was previously assumed, and it appears that the sheer number of father-child interactions are increasing (Ricks, 1985).

There is evidence that fathers' who are heavily involved in childcare activities rear children who are relatively more competent and responsive socially (Sawin

& Parke, 1979), have a more internal locus of control (Radin & Sagi, 1982) and score higher developmentally on mental tests (Carlson, 1980). Paternal involvement in childcare translates into more father-child interactions, with positive repercussions for children. Sheer frequency of father-child interactions appears to positively impact upon school performance, although it's not clear whether this is due to increased motivation, greater cognitive stimulation or other factors yet to be explained. As evidence, Blanchard and Biller (1971) found that when child IQ and family socioeconomic status were controlled for, boys with high father interaction levels received higher grades than boys with lower levels of paternal interaction. High achieving males also prefer to be with fathers (Mutimer, Laughlin, & Powell, 1966) and are more similar to their fathers in attitudes and values (Teahan, 1963) than low achieving males. Investigations into father-absent families have consistently found children with more social and academic problems than children from intact families (Lamb, 1979; Webster-Stratton, 1985). This finding needs to be taken with caution, as many other factors could account for these differences (i.e. poverty, education level).

Several investigators have observed father-child and mother-child interactions in vivo and have found surprisingly few significant differences in parental behaviors (Lamb,1977; Power & Parke, 1986). One consistent finding is that fathers are more involved in play and physical activities with their children than mothers (Clarke-Stewart, 1978) which may be instrumental in lowering levels of social fear (Pederson, Yarrow, Anderson & Cain, 1979) and improving social competence (Kunst-Wilson & Cronenwett, 1981). Although positive social and cognitive outcomes in children have been consistently linked to secure mother-infant attachment and maternal nurturance (Bowlby, 1979; Estrada et al, 1987), little is known about the role of the father in this regard. Tenuous ties have been found between the affective nature of father-child relationships and child IQ, especially with boys. Radin (1973), for example, found a positive relationship between "nurturing" fathers (i.e. fathers who used positive reinforcement, consulted with and expressed warmth toward sons) and child IQ level. Father-child warmth has been linked to high field independency, especially in boys (Dyk & Witkin, 1965). Field independent, as opposed to field dependent

cognitive orientations have been positively linked to school achievement (Kagan & Buriel, 1977) and social autonomy (Witkin et. al, 1977).

Role of the Father in Independence/Mastery Training

There is intriguing evidence that mothers and fathers, by the degree of autonomy they allow and encourage in parent-child decision making situations, may implicitly influence their childs' sense of efficacy. Several studies have brought attention to a link between child efficacy in a task and superior performance (i.e. Heckhausen & Weiner, 1974; Walden & Ramey, 1983). Distinct parental behaviors that promote child independence and decision making appear to contribute to this sense of efficacy (Evans & Anderson, 1973; Dill, 1975). For instance, Walden and Ramey (1983) initiated a five year intervention program for black children identified to be at high risk educationally. These target children were provided with developmental tasks they could comfortably master. In addition, efforts were made to instill an attitude of personal efficacy and control (i.e. by the use of verbal encouragement, showing patience and allowing autonomous decisions). Classroom

behavior measures showed target children to be significantly more task oriented, less distractible and more internally motivated than control group children. Significantly higher achievement scores, though not IQ scores, were found in the intervention group children as well. Another longitudinal study focusing on mother-child interactions and controlling for maternal IQ found that a warm, non-restricting maternal style in teaching situations and in play was associated with child persistence in tasks and longstanding school achievement (Estrada et. al., 1987).

Links between paternal teaching styles that promote autonomy and child efficacy/achievement measures have begun to attract attention. Early efforts compared teaching strategies of fathers from varying socioeconomic status backgrounds and found that low SES fathers were more punitive, hostile and authoritative than their middle class counterparts in parent-child interactions (Baumring, 1971; Heilbrun, 1973). A more restricting and intrusive paternal style has been correlated with lower cognitive ability in children. Illustrating this, in problem solving tasks given to father-son dyads, higher levels of paternal assistance and involvement were

negatively correlated with their childs IQ level (Radin & Epstein, 1975). In a similar study, Dill (1975) had black fathers help their child assemble puzzles, and found greater paternal involvement to be correlated with lower child intelligence scores.

A pilot study done for this project (Casas & Strand, unpublished manuscript) suggests that these findings have important implications for Mexican-American families as well. Interactions between Mexican-American fathers and their children on a model assembly task were coded and distinct paternal teaching styles were identified. Fathers tended to teach in three main ways, using some combination of verbal instruction, visual demonstration, and independence training (in which they encouraged their child to work autonomously). Paternal independence training, a combination of verbal statements encouraging autonomy and child-initiated activities where father observes without interfering, was positively tied to child classroom performance as rated by their primary teachers. Conversely, fathers who were highly interactive and/or controlling in the task were associated with children who were not rated as highly by their primary teachers.

These results suggests that paternal teaching strategies emphasizing autonomy are associated with positive child achievement outcomes. A viable explanation is that in conveying directly or implicitly to a child that s/he is capable, a sense of confidence, or "efficacy" builds (Bandura, 1977). This belief in one's ability may translate into behaviors such as persistence, low distractibility, and enthusiasm that are crucial to effective school performance (Estrada et. al., 1987). In fact, links between efficacy level and persistence have been found with normal school-aged children (Schunk, 1981), conduct-disordered children (Lyman, Prentice-Dunn, Wilson & Bonfilio, 1984) and college students with respect to pursuing specified majors (Betz & Hackett, 1983; Lent, Brown & Larkin, 1984). A study reporting on father-toddler interactions indicates this interrelationship may be found even with the very young. Fathers who encouraged their toddlers to work independently on puzzles, while providing age-appropriate cues and verbal encouragement, were associated with young children who were rated as persistent and self-directed in task orientation and who scored high on measures of competence in developmental

tasks (Easterbrooks & Goldberg, 1984).

Conversely, high involvement levels of fathers in parent-child task situations has been associated with low achievement measures in children, although this phenomenon has not been heavily researched (Dill, 1975; Radin, 1976). Initial reports suggest that overly controlling and intrusive paternal behaviors may undermine child efficacy. Children with fathers who are intrusive in teaching situations may implicitly learn that they are not capable of making decisions or solving problems without assistance and in turn may demonstrate an attitude of "learned helplessness" (Relich, Debus & Walker, 1986). In support of this, Casas and Strand (unpublished manuscript) found that children with highly involved fathers also asked for assistance significantly more often in problem-solving tasks, indicating low persistence and a orientation of dependence on others. There are some indications that parents in disadvantaged families may teach their children in ways that are counterproductive to child efficacy. Anderson and Evans (1976), for example, found that Mexican-American children who were being outperformed in school by Anglo children also perceived themselves as being allowed less autonomy

in decision making.

While evidence is mounting that fathers play an instrumental role in building personal and social efficacy in their child, it should be noted that the vast majority of paternal research has been conducted on white middle class fathers. It is not yet known whether these findings extend to Mexican-American fathers, or to what degree they are tied to acculturation level or socioeconomic factors. In fact, no research project to date has investigated the range and nature of paternal teaching behaviors in Mexican-American families, and only a handful of studies have attempted to gauge how involved they are in home activities that have been posited to promote cognitive development in children.

Mexican-American Father Roles in respect to Childcare, Child Gender and Family Decision Making

The Mexican-American father has been typically portrayed as an autocratic, aloof family figure. At first glance, this "machismo" image appears to have empirical support. Researchers have predominently relied on "self-report" methods in which fathers are queried as to the nature of their role in the family. Fathers do

indeed report that they are not heavily involved in child rearing practices and take on an authoritative role in family decision scenarios (Bronstein, 1984). However, studies that directly observe family decision making processes and father-child interaction patterns are finding strong evidence to the contrary. Field studies using direct observations reveal that Mexican-American mothers and fathers make most decisions jointly, and appear to be primarily egalitarian in terms of family influence (Cromwell & Ruiz, 1979, McClintock, 1984). In fact, in unobtrusive naturalistic observations of Mexican national families, fathers are shown to use significantly more "egalitarian" behaviors such as agreement, showing affection, explaining, and acting playful than mothers. Additionally, they are not any more punitive or restrictive toward their child (Bronstein, 1984).

Fathers in the Bronstein (1984) study did interact differently with their children depending on their gender. While male children were given high attention and task relevant demonstrations were provided, female children were less attended or listened to, and were given little task related information (Bronstein, 1984).

Differential attention and assistance in teaching

situations, and less exposure to cognitively stimulating home activites, may translate into lower efficacy and eventually lower performance scores for female children. While Mexican-American fathers give their male children the implicit message that they are capable and deserving of instruction and attention, the same message appears to be withheld from female children, who instead may receive subtle cues indicating that they are not capable problem solvers or decision-makers (Block, 1979). In fact, evidence from census data does reveal that Mexican-American females twenty-five years or older are much less likely to have completed college than their male counterparts (U.S. Census, 1980). Although only minimal field data has been collected on gender-specific behaviors of Mexican-American fathers, this area may prove helpful in identifying the root causes of this discrepancy.

A clear picture of father-child relationships in Mexican-American families, encompassing patterns of childcare and gender-specific behaviors has not yet emerged. Emerging field-based data is revealing a markedly more involved and varied portrait of Mexican-American fathers that the one gathered from

questionnaires and surveys. Direct observational data is helping to replace stereotyped images of the Mexican-American father with a more comprehensive and accurate understanding of him and his influence in the family (Mirande, 1979).

Summary

The role of the father in their childs' socialization and cognitive development has been overlooked by researchers. Educational investigators have particularly ignored the Mexican-American father, who has been assumed to be a highly characterized and homogenous figure. These assumptions are just now being called to task as a result of emerging field data and the use of more elaborate statistical designs. Proximal paternal variables including how Mexican-American fathers teach, play with, read to, show warmth toward, and promote autonomy in their child are beginning to emerge and be associated with variances in child classroom performance. Investigating the Mexican-American fathers' role in childcare, and how they interact with children in respect to their gender may help to further identify which factors help and which hinder social and cognitive

development. Long held assumptions about Mexican-American fathers have begun to be reexamined and their contribution to the social and cognitive development of their children are beginning to be recognized and researched.

Purpose of the Study

This study was undertaken in an effort to examine the impact of attitudes and behaviors adopted by the Mexican-American father. Specifically, this study investigated within-group differences in paternal behaviors and interaction patterns as well as the potential effects these variations may have on the academic performance and cognitive development of children. The influence of acculturation on paternal behaviors and roles is examined in order to provide a more comprehensive picture of fathering practices and families that are undergoing a cultural transition.

As a group, it's well documented that Mexican-Americans fare poorly on measures related to school achievement. While much research has focused on distal factors associated with academic success and failure, very little field research has been conducted in an effort to assess the nature and range of proximal, observable behaviors in the home environment. Emerging research on Mexican-American families reveals that significant within variations occcur in family interaction patterns that can be measured and studied.

Efforts to pinpoint behaviors and attitudes of parents that are associated with academically successful children may provide clues that point to effective intervention options.

Unfortunately, the bulk of research on Mexican-American familial influences has compared them with Anglo families in both interactional and outcome measures. These comparisons may be akin to comparing apples and oranges, as Lamb (1975) notes when he posits that parent-child interactions in Mexican-American families may be qualitatively different than in Anglo families. In addition, there is the inherent danger of assuming that solutions lie in adopting the attitudes and behaviors of the majority culture.

This study identifies behavior and interaction patterns already used by Mexican-American fathers and in turn traces their respective influence on child outcome measures. Finally, it incorporates much needed field data and endeavors to go beyond prevailing stereotypes and achieve a more comprehensive understanding of the Mexican-American father.

Hypotheses

1. Fathers' level of acculturation will be tied to distinct patterns of teaching behaviors measured in father-child tasks.

2. Based on observations of fathers' task-related behaviors, distinct paternal teaching profiles can be identified that are associated with differing degrees of academic performance and verbal intelligence in children.

3. Fathers' use of language in selected measures of home cognitive stimulation will vary with their level of education and will be associated with variations in verbal intelligence scores and ratings of academic performance in children.

4. The amount of paternal involvement in childcare related activities will differ with respect to acculturation level and will be associated with variations in measures of childrens' classroom performance.

5. Fathers will vary their interactions with respect to child gender in selected proximal behaviors including teaching strategies and amount of home cognitive stimulation.

Chapter II

Methods

Participants

Sample Selection

The sample for this study was comprised of 59 working class Mexican-American families that had originally agreed to participate in a multi-faceted longitudinal study conducted for the National Institute of Mental Health (NIMH). Families were contacted and recruited through a) their association with "Centro Familiar de Santa Barbara" (Centro), a non-profit family care center; b) bilingual flyers describing the project that were distributed and posted in neighborhoods with a high density of Mexican-American residents; c) door-to-door canvassing in these same neighborhoods; and d) letters written to local organizations, churches and businesses in an effort to gain referrals. While eighty potential families were initially identified, sixty-five families which met the following criteria were ultimately selected for inclusion in the study: 1) the families were intact and both parents were willing to be involved in

the project; 2) each family had a child between the ages of five and nine who was attending grades kindergarten through third grade. Each family was offered forty dollars if they agreed to participate in the study.

Previous research with Centro families indicates that relative to such measures as education and occupational status, the families are representative of families in the targeted community at large (McClintock, Bayard, Brandes, Castro, & Pepitone, 1977).

Sample Description

Although sixty-five families were selected for inclusion in the study, the actual sample as noted earlier was comprised of fifty-nine families. Six families were exluded as a result of their failing to provide the requisite data for the study. Relative to the characteristics of the sample, in thirty of the families both parents were born in the United States, while in the remaining families at least one parent was born in Mexico. Ninety per cent of the fathers were employed in blue collar occupations, while the remaining ten per cent worked clerical or semiprofessional jobs. The fathers ages ranged from twenty-five to fifty-eight,

with thirty-six being the average age. In terms of language spoken in the home, twenty-nine fathers predominently spoke Spanish, fifteen were bilingual and used both languages, while fifteen mainly used English at home.

There were thirty-one female children and twenty-eight male children in this sample. Approximately half of the families had a child in kindergarten or first grade, and about half had a child in the second or third grade. The children in our sample attended a total of eighteen schools, and had a total of forty-nine primary teachers (some teachers had more than one target child in their class).

Procedures

This section on procedures encompasses nine areas necessary to conducting this project. First, informed consent procedures for interviewing and observing parents in their home, as well as for involving teachers in an evaluative role are presented. Then procedures used in conducting father interviews and mother interviews are covered. Next, procedures for obtaining child outcome measures by means of teacher evaluations and verbal

intelligence measures are outlined. The procedures used to implement a structured father-child task are specified, as well as the coding procedures used to measure task interactions. Pilot coding procedures are presented and modifications of the coding schema are explained. Procedures to insure adequate reliability of ratings between observers and across languages are specified. Finally, indices used to determine the acculturation level of fathers are included.

Informed Consent

Specific project goals were presented to all parents of selected families, and any questions or concerns about the project were addressed. Procedures for conducting home interviews and videotaping parent-child interactions, as well as for obtaining data from primary teachers were explained. Consent forms for home interviews and for teacher involvement were then signed and verified in accordance with guidelines established by Centro Familiar, the United States Department of Health, Education and Welfare, and the University of California. After parental consent was obtained, a preliminary interview was conducted in each

family's home, where appointments were scheduled for subsequent interviews and taping sessions.

Principles from four private schools and administrators from five public schools were contacted and informed of the study. Permission to arrange for teacher participation in the study was granted in each case.

Father Interviews

Fathers were individually interviewed in their own homes by a trained Hispanic male research assistant who was fluent in Spanish and English. Interviews were conducted in the father's preferred language. Extensive demographic information was collected, as well as a wealth of information about the father's role in the family and the nature of his involvement with the identified child. Each father was orally administered the Parents Background Form (PBF) and the Cognitive Home Environment Scale (CHES). The intent of the interview was to get a relatively complete picture of the range and nature of paternal involvement in their child's socialization and educational process.

Mother Interviews

Mothers were interviewed in their preferred language by a bilingual Hispanic female research assistant. The purpose of this interview was to gather extensive demographic and role-specific data relevant to the families we were investigating. Mothers were administered the Household Activity questionnaire (HA), an eighty-five item inventory that asked them to identify which family members carried out each of the listed household responsiblities. Forty of these orally presented questions pertained specifically to division of childcare responsibilities between mother, father and others and were included in our analysis of childcare responsibilites in Mexican-American households. To insure against any misunderstanding, cards were sketched and placed near the mother that depicted in turn all possible combinations of family members (i.e. mother and daughter). After each question was asked, mothers pointed to the card that identified which family members participated in the activity.

Child Outcome Measures

To assess childrens' cognitive development and

school performance, procedures for obtaining measures for these two variables were implemented. To gauge school related information, primary teachers of target children were contacted and asked to complete a written evaluation that assessed the childs' current classroom performance, skills and knowledge compared to classmates, and academic potential. The skill and academic potential evaluations were Likert type ratings, while the performance measure asked for open ended comments (see instruments section).

Verbal intelligence was then assessed as a measure of cognitive development. Children were transported to the Counseling Psychology Clinic at the University of California, Santa Barbara on a weekend, and spent the day there. At the clinic each child was seperately administered Form A of the Peabody Picture Vocabulary Test (PPVT). The test took approximently fifteen minutes to administer and was conducted by graduate students in education who were familiar with administration procedures pertaining to the Peabody.

Father-Child Task

In an effort to assess what teaching strategies fathers' use with their children, a structured task was

introduced in which they were asked to assist their child in assembling two cardboard models (an airplane and a helicopter; Dowley Doos Peg-a-plane, Lauri Incorporated). A tray of unassembeled model parts was placed on a table in front of the father and child. Snapshots of completed airplane and helicopter models along with two diagrams of their respective model parts were provided for reference. The male research assistant who had been collecting data throughout this project set up a video camera and recorder approximently five feet from the table, in order to videotape the teaching interaction.

Identical instructions were verbally given to each father by the research assistant. Specifically, fathers were asked to teach (ensenar) their child "in any way they choose" to assemble the model plane and helicopter. Videotaping was initiated and the assistant left the room. The session concluded when both models were completely assembled, with every father-child dyad successfully finishing the task.

Coding Procedures

The first five minutes of the fathers

videorecorded teaching behaviors were coded using a revised version of the Maternal Teaching Observation Technique (MTOT) instrument (see instruments section). On three occasions the dyad completed both models in slightly under five minutes. To adjust for this, rate-per-minute scores were calculated for all dyads. This involved taking the frequency of each behavior, dividing it by the total observation period in seconds, and multiplying the result by 60, resulting in a separate rate-per-minute score for each behavior (this is equivalent with dividing the raw frequency score by five if all five minutes were used in the task).

Pilot Coding Validation

Initially, several videotaped father-child interactions were observed by two graduate students in education and a graduate advisor to determine the appropriateness of the MTOT for use in this study. As a result of these observations several changes were made in the schemata, in an effort to increase the sensitivity of the instrument. Three categories were deleted because they occurred infrequently in previous studies (Laosa, 1980; 1982) as well as in this study. These categories of

behavior were physical affection, positive physical control and negative physical control. Given the fact that this study videotaped father-child interactions rather than attempting to code them in vivo, observers were able to carefully observe interactions, and replay sections of the tape as often as it was necessary to insure coding accuracy. As practice in using the MTOT coding device ensued, there was high interobserver agreement that fathers gave task-related suggestions and hints during teaching interactions, and no category existed in the MTOT schema that coded this behavior. In response, coding test criteria were developed for a new behavioral category labeled verbal description. There was also high observer agreement that paternal inquiries were of two distinct types a) inquiries about sequence and strategy decisions that encourage child to operate at a metacognitive level (i.e. Moss, 1983) in the task (i.e. which part do you need next?), and b) inquiries related to content of the model, that did not encourage metacognitive functions (i.e. where is the yellow piece?). This distinction may be important, as Moss (1983) reports that parents of gifted children use significantly more sequence and process-type inquiries

than parents of normal children. Coding test criteria was established in order to expand the existing MTOT category of inquiry into two seperate categories respectively labeled process inquiry and content inquiry.

Finally, in an effort to gauge how much autonomy fathers granted their child in the task, the category "Child Independent Act" on the original MTOT format was redefined into a paternal behavior called "Independence Training" and the criteria for inclusion was made more specific. As noted in the review of literature, parents significantly influence their child's sense of efficacy in proportion to how much autonomy they grant him or her in decision making scenarios. Paternal independence training, as defined in this study, measures the extent that fathers allow and encourage independent acts on the part of their child. In this regard, child-initiated attempts to piece together model parts, while fathers observed but did not interfere were coded as paternal independence training. Included in this category are verbal statements of fathers that encourage them to operate autonomously (i.e. "go ahead, you can do it on your own") as well as observing but not interfering with child when s/he initiates a physical attempt to assemble

the model.

Following revisions and reliability checks (see reliability of ratings section) observers manually recorded both the frequency and duration of the following paternal behaviors: (a) Inquiry: directing a content (Where's the yellow piece?) or process (What goes there?) oriented question to child, (b) Command: verbally instructing child to perform some behavior/action, (c) Praise: expressing verbal approval of child or child activity, (d) Verbal Description: advice, information or suggestion to child related to task completion (You need a smaller piece there), (e) Disapproval: verbal indication that father does not approve of child or child activity, (f) Modeling: actively constructing model while child observes, (g) Visual Cue: attempting to attract child's attention by lifting, sliding or pointing to a model part. (h) Independence Training: two criteria were included 1) father verbal encouragement to work independently, 2) action initiated by child that involves selection of, or piecing together model parts without paternal assistance or interference (must be directed at completing model, not random act). Father must be observing child in order to code this behavior.

Replicating Laosa's (1982b) work, two child behaviors were also identified and coded in relation to the task. Specifically, these child behaviors were; (a) Child Asks: question or request for help directed to father, (b) Child Rejects: refusing to follow father's command or suggestion. These child behaviors were included in order to gauge how dependent children were on their fathers for assistance.

Reliability of Ratings.

Reliability ratings were generated using the full gamut of revised MTOT categories. For ease of coding purposes, each five minute videotaped session was divided into six fifty-second sections (see Appendix B). After 20 hours of practice using the revised MTOT schemata, inter-observer reliability was established by having both observers separately watch and record two randomly selected sections (totaling 100 seconds) from seven different tapes, all conducted in English. The first five of these checks were made before coding began. One reliability check was made after one-half of the tapes were coded and a final check was made on the last tape. Because only one recorder was fluent in Spanish, a third

observer, who was bilingual, was trained. Five random reliability checks were made between this observer and the English speaking recorder, and five more between both bilingual observers in order to insure reliability was maintained across languages.

Spearman rank-order correlations, corrected for ties, were computed for the raw frequencies collected for each observed section. All of the rho coefficients were highly significant (.01, one-tail test). The recorders established reliability that ranged from .75 to .99, median = .88 on the obtained raw frequencies. Reliability was also significant across languages - the trained bilingual observer established reliability on raw behavior frequencies with both the English speaking recorder (.76 to .93, median = .90), and the second bilingual recorder (.70 to 1.00, median = .95).

Reliability checks were also conducted seperately on each of the nine identified paternal teaching behaviors. Although five of the behaviors had been reliably coded in several previous studies (Laosa, 1980; 1982b), four were new or modified behaviors with no record of reliability. Using the same seven tapes used to establish interrater reliability, Spearman rankings

from both observers were collected in turn for each behavior. Then new Spearman rank-order correlations, corrected for ties were computed seperately on observer rankings for each behavioral category. Using this procedure, a measure of reliability for each behavior was generated. All nine behaviors were significant at the .05 level and five were also significant at the .01 level. Respectively, rho coefficients were as follows: content inquiry, r=.87; process inquiry, r=.87; disapproval, r=.72; praise, r=.77; command, r=.86; visual cue, r=.96; modeling, r=.90; verbal description, r= .92, independence training, r= .87. The four new or modified behavior codes were found to be comparable to the other measures in terms of reliability.

Acculturation Level

Fathers' generational status (e.g. immigrant, second, third or fourth generation) was used to determine their level of acculturation. This measure of acculturation has been extensively validated in studies similar to this one (see Montgomery & Orozco, 1984). In addition it was highly correlated with father language, education level, and country of education ($p > .001$). In

using this index two distinct groups of fathers emerge in the study. Thirty-six fathers were labeled low acculturation and had the following characteristics. Each father immigrated to the United States sometime after the age of twelve, and the majority (88%) after age eighteen. All education received by fathers in this group took place in Mexico. Additionally, these fathers predominantly spoke Spanish in their homes. The mean years of education for low acculturation fathers was 4.4. In contrast twenty-three fathers were labeled high acculturation with the following characteristics. Every father except one was born in the United States (the one exception moved here as a child). All schooling took place in the United States, with the mean years of education being 12.9. These fathers spoke primarily English or both English and Spanish at home.

Instruments

Maternal Teaching Observation Technique (MTOT)

To assess paternal teaching strategies a modified version of the Maternal Teaching Observation Technique

(MTOT) was used. This behavioral coding device was developed by Laosa (1978), and has been used extensively in studies that measure teaching behaviors in Mexican-American families (i.e. Laosa, 1980; 1982a). Through such studies it has been demonstrated that adequate inter-observer reliability can be achieved with the MTOT. Additionally, the MTOT has been shown to reliably generate enough behavioral data so that sophisticated analysis can be performed with it (Laosa, 1982a). A pilot study investigated the suitableness of the original MTOT instrument for this study. Several changes were made in the schema (see pilot coding validation). The revised MTOT schema is exhibited in Appendix A, and a sample coding grid is shown in Appendix B.

Parents' Background Form (PBF)

The PBF (Appendix C) was used to gather demographic information from fathers via a structured interview in the family home. Such information included amount of education, ethnic self-identification, and generational status. The PBF was initially given to a sample of participants, in order to elicit feedback on

item clarity and appropriateness. Revisions were made and the instrument was then administered to all participating parents. The PBF has previously been used with Mexican American families and assessed as appropriate (Casas, McClintock & Williams Moore, 1984).

Academic Performance - Teacher's Perspective

Each child's primary teacher was asked to evaluate target children in three areas; (a) the child's level of skill and knowledge in comparison to classmates (b) current class performance, and (3) academic potential of the child. Ratings were forced choice, ranging from 1 (poor) to 4 (excellent) on the skill and knowledge rating, and 1 to 5 (very low to very high) on the teacher rating of child academic potential. The evaluation of current class performance asked teachers to write a short open-ended response. This measure was assigned a value from 1 (poor) to 4 (excellent), to allow for quantitative analysis. The three evaluations were highly correlated ($p > .001$). Scores ranged from 3 to 13 with a mean of 9.2. Points were added and one total was attained for each child that represented their overall academic performance. The three evaluative items are presented in

Appendix D. This instrument was administered with the assumption that teachers, given their close daily interactions with children, are in a good position to evaluate their academic performance (Ponterotto, 1985).

Cognitive Home Environment Scale (CHES)

Developed by Radin and Sondquist (1968), this scale assesses the amount of cognitive stimulation children are exposed to in their home environment. The CHES instrument has been used to measure both paternal (Radin & Epstein, 1975) and maternal (Ponterotto, 1985) levels of home cognitive stimulation. The CHES has also been validated for use with lower income families (Radin, 1974). This twelve-item scale assessed parental involvement level in activities related to literacy and numeracy (such as how often they read to their child and whether they taught their child to read and count), and the language in which those activities were conducted. The CHES also measured the frequency of parental involvement in activities such as play and homework assistance. Eight of the questions were of a yes/no nature (i.e. did you teach your child to write his/her name?), with a yes response earning one point and a no

response earning zero points. The four remaining items were assigned points in relation to how often the activity in question was carried out, with points increasing with frequence of the activity. Scores were added and one total CHES score was obtained, ranging in our sample from 0 to 25, with a mean of 15.4. The CHES intrument is displayed in Appendix E.

Peabody Picture Vocabulary Test

Each child was administered a version (Form A) of the Peabody Picture Vocabulary Test (Dunn, 1965). Scores obtained from the Peabody have been extensively validated with concurrent tests of intelligence such as the Stanford-Binet Scale (Concannon, 1975) and the verbal scale of the Weschler Intelligence Scale for Children-Revised (Covin, 1977).

Household Activity Scale

This forty-item questionairre was adapted from a larger scale investigating division of tasks and childcare responsibilities in families (Berk & Berk, 1979). Research assistants translated each scale item into Spanish, and these translations were reviewed and

approved by the project leaders. Some items were added in an effort to achieve a thorough picture of the nature of paternal involvement in childcare (McClintock, personal communication). The items specifically asked which family members were involved in each childcare related activity. Fathers were awarded one point for each activity they participated in, whether it was by themselves or with other family members. Totaled scores ranged from two to thirty-six, with a mean of twenty-three, with higher scores representing greater paternal involvement in childcare activities. The scale is shown in Appendix F.

Chapter III

Results

In Chapter I five hypotheses were presented in concert with the purpose of the study. Specifically each hypothesis was generated in an effort to provide field data on the Mexican-American father that would help identify his family role and range of behaviors. Associations between variations in paternal roles and behaviors and child performance measures were also investigated for heuristic purposes. This chapter presents the results of each of the five hypothesis.

Hypothesis #1

In the first hypothesis, fathers level of acculturation was studied to see if it was tied to distinct patterns of teaching behaviors as measured in father-child interactional tasks.

A correlation matrix is presented in Table 1 that examines the interrelationships between all nine paternal teaching behaviors coded in the model assembly task, and father level of acculturation (father generational status, see procedures section for criteria). Both child behaviors were also included in the matrix to help

achieve an overall picture of father-child interaction patterns with respect to acculturation.

As Table 1 indicates, the hypothesis that fathers' vary their teaching styles in respect to their level of acculturation is supported. High acculturated fathers tended to use verbal, direct modes of instruction with their children. Specifically they were more active in initiating directives, evaulations, and verbal/visual cues than were low acculturated fathers. These latter fathers tended to teach indirectly by modeling (visual demonstration of task-completion behaviors) while their child observed. There appeared to be different paternal attitudes operating in high and low acculturated fathers with respect to allowing their children to make task-relevant decisions (independence training). High acculturation fathers did not encourage or allow their children to operate as autonomously in the task as did low acculturation fathers. Although correlations between these variables did not reach significance, more paternal acculturation was negatively associated with independence training ($r = .23$). Paternal independence training was negatively and significantly ($p > .01$) associated with the direct teaching behaviors of praise, disapproval,

Table 1
Intercorrelations of Paternal Teaching Behaviors,
Child Behaviors and Father Acculturation Level

	PI	DS	PR	VC	MD	VD	CM	IT	CR	CA	AC
CI	.46a	.25	.35b	.34b	-.06	.21	.24	-.24	-.16	-.08	-.03
PI		.58a	.58a	.47a	-.20	.21	.50a	-.27	.02	.10	.33b
DS			.52a	.54a	-.23	.28c	.70a	-.31c	.07	.47a	.61a
PR				.59a	-.20	.20	.53a	-.36b	.00	.09	.44a
VC					-.30c	.10	.55a	-.45a	-.02	.24	.38b
MD						.15	-.03	.15	-.03	-.07	-.28c
VD							.34b	-.13	.15	.29c	.22
CM								-.49a	.16	.35b	.46a
IT									.08	-.17	-.23
CR										.21	.10
CA											.48a

a = p <.001
b = p <.01
c = p <.05

Variable Names:

CI = Father content inquiry
PI = Father process inquiry
DS = Father verbal disapproval
PR = Father verbal praise
VC = Father visual cue
MD = Father nonverbal modeling
VD = Father verbal description
CM = Father verbal command
IT = Father independence training
CR = Child rejects fathers' verbal or nonverbal assistance
CA = Child asks question about task or requests help
AC = Father acculturation level

visual cue and command.

These associations indicated that fathers became increasing verbal and directive toward their children in the task with respect to their level of acculturation. Consequently, children who receive these directives may become more dependent and less willing to initiate actions on their own. As evidence, children asked for help (CA) from these active fathers significantly more than from low acculturated fathers who were not as directive in the task.

Hypothesis #2

The second hypothesis stated that based on observations of fathers' task-related teaching behaviors, distinct paternal teaching profiles could be identified that were associated with differing degrees of academic performance and potential in children, as rated by their primary teachers, while controlling for child intelligence and age.

In an effort to identify patterns of teaching behaviors, a principle components factor analysis was performed on all nine paternal categories of behavior. The eigenvalue was set at .75 rather than the standard 1.0, to help prevent a Type one error due to the small number of variables being analyzed (see Cureton & D'Agostino, 1983).

Four factors met this criteria. These factors together accounted for 75.56% of the total variance. Factor one is labeled direct teaching and is comprised of five verbal behaviors and visual cue. Factor two is labeled indirect, as it loads high on modeling and verbal description (hints, suggestions). These two paternal behaviors suggest a teaching approach that is less intrusive and more subtle than those comprising factor

Table 2

Four-Factor Principal Components Analysis for Paternal Teaching Patterns

	Factor			
Variable	1	2	3	4
CI	0.520	0.099	0.673	-0.426
PI	0.768	-0.037	0.314	0.113
DS	0.804	0.006	-0.134	0.348
PR	0.783	-0.086	0.084	0.066
VC	0.774	-0.257	-0.086	-0.095
MD	-0.275	0.781	-0.017	-0.134
VD	0.367	0.700	0.043	0.180
CM	0.799	0.218	-0.307	0.132
IT	-0.523	-0.039	0.495	0.635
Eigenvalue	3.841	1.233	0.926	0.800
% of total variance	43	14	10.3	9

Note. Factor one = direct teaching: Factor two = indirect teaching: Factor three = independence training + content inquiry: Factor four = independence training.

one. Factors three and four both load high on independence training, suggesting that this is a behavior that operates independently of the other factors, and is worthy of investigation. As Table 2 depicts, paternal teaching patterns tend to cluster around these three identifiable groups. Fathers tended to use either direct, mainly verbal behaviors in teaching their children, or the more indirect teaching behaviors of visual demonstration (modeling) and verbal hints/suggestions (verbal description). Independence training loads highly on both factor three and four and can be considered a third, distinct teaching approach emerging from the factor analysis that is sometimes linked with content inquiry.

These three identified teaching approaches were analyzed further in an effort to assess if they were associated with variations in the school performance in children. Fathers were grouped into categories with respect to whether they exhibited more or less of each of the three behavioral patterns. To this end, split-median analyses were performed on all three patterns in the following way:

Factor one (direct teaching). Raw frequencies of the

five behaviors loading highly on this factor were totaled for each father. Because of the verbal nature of this factor (process inquiry, disapproval, praise, visual cue, and command) it was labeled VERB. Each father was placed into a high or low VERB category depending on whether their total behaviors in this category were above or below the median for the entire sample. Content inquiry and verbal description were omitted from analysis on this factor for two reasons; 1) they also loaded highly on other factors, and 2) were not as highly loaded on the direct teaching factor as were the five behaviors chosen to comprise the factor.

Factor two (indirect teaching). The paternal behaviors of modeling and verbal description were used to represent this factor. Raw frequencies for modeling and verbal description were totaled for each father. Each father was then placed in a high or low category (labeled MOD) depending on whether they exhibited more or less of these indirect behaviors than the median established for the sample as a whole.

Factor three (independence training). Since paternal independence training loaded highly on both factor three and factor four, it seemed reasonable to assume that it

comprised a third factor of teaching unrelated to direct or indirect patterns. Content inquiry also loaded on factor three but was omitted from analysis on this factor as it also loaded on factor one, and was not correlated overall with independence training ($r = -.07$). Raw frequencies for independence training were totaled for each father. Each father was then placed in a high independence training or low independence training category (labeled IND) depending on whether they exhibited more or less than the median of this behavior established for the sample as a whole.

As a result of placing fathers in a high or low cateory on each of the three factors, six initial categories were formed. These six categories were then combined where appropriate into blended categories. For example, fathers who exhibited more than the median verbal behaviors and more than the median independence training behaviors were grouped into a verbal + independence (V+IND) group. By combining groups in this way seven father "profiles" emerged that were inclusive of our entire sample. One category labeled "high modeling only" was comprised of only three fathers and was subsequently collapsed into the "high modeling + high

Table 3
Group Teacher Ratings and Peabody Picture Vocabulary
Means for Paternal Teaching Profiles

1. (IND) High independence, low verb/modeling		N = 10
	Teacher Rating	M = 9.90
	Peabody Scores	M = 92.6
2. (M+IND) High modeling/independence, low verb		N = 15
	Teacher Rating	M = 10.0
	Peabody Scores	M = 92.3
3. (M+V) High modeling/verb, low independence		N = 12
	Teacher Rating	M = 8.75
	Peabody Scores	M = 96.9
4. (V+IND) High verb/independence, low modeling		N = 7
	Teacher Rating	M = 10.28
	Peabody Scores	M = 99.4
5. (VERB) High verb, low independence/modeling		N = 9
	Teacher Rating	M = 6.66
	Peabody Scores	M = 91.5
6. (LOW) Low modeling/independence/verb		N = 6
	Teacher Rating	M = 9.16
	Peabody Scores	M = 91.0
Total Sample Means:	Teacher Ratings	M = 9.16
	Peabody Scores	M = 93.8

independence" category. The reason for this is that each of the three fathers in question were only one behavior short of being categorized in the high independence group, so they were not seen as exhibiting a teaching pattern that was distinct from the M+IND fathers. In addition, the three fathers all had children whose teacher ratings exactly matched the group mean of teacher ratings for children of M+IND fathers (Mean = 10), so the integrity of the combined category was not comprimised in terms of the dependent variable. As a result of this collapsing procedure six teaching profiles emerged and are shown on Table 3.

Profile one, labeled high independence only (IND) was comprised of fathers who encouraged child initiated actions but provided little direct or indirect teaching. Typically these fathers gave an initial message to their child, (i.e. "you try doing it by yourself, and if you need help let me know") and then observed while their child assembled the model.

Teaching profile two was labeled high modeling + independence (M+IND). Fathers associated with this profile tended to teach indirectly with demonstration and suggestions, but also encouraged their child to work

autonomously in the task. A "give and take" style of interaction best describes this paternal pattern, where fathers first visually demonstrated an action (e.g. how the wings go on) then allowed their child to take over and work autonomously.

Profile three was labeled high modeling + high verbal (M+V). Fathers in this profile blended their instruction using the full range of direct and indirect teaching behaviors. They typically were highly interactive and controlling in the task in the sense that they tended to direct their childs' actions. As such they did not encourage or train their child to operate independently.

Profile four was labeled high verbal + independence (V+IND). Fathers in this profile mainly relied on verbal teaching behaviors, and also promoted independent behaviors in their child. Typically they allowed and encouraged their child to initiate task-related acts, then would provide them with verbal feedback including praise, inquiry or disapproval. As such they did not direct their childs' activities, but did react to child initiated actions by giving evaluative feedback and information.

Profile five was labeled high verbal only (VERB) and was representative of fathers who also favored verbal teaching behaviors but did not allow or encourage their child to make task-related decisions. In contrast to the V+IND fathers, VERB fathers were highly involved and directive in the task, to the point where it was difficult for their child to initiate actions or make task decisions. Their sheer frequency of verbal behaviors was nearly 50% higher than that of V+IND fathers ($t = 1.527 > .10$).

Finally, profile six was labeled low teaching (LOW). Fathers associated with this profile offered little direct or indirect teaching and at the same time did not promote independent acts in their children. These fathers often worked on the task independent of their child and had little interaction with them. Several fathers actively competed with their child instead of assisting them in the task. Due to the fact they did not oversee or observe their childs' actions, it was not possible to determine their attitude toward child autonomy.

These six paternal profiles were compared via a one-way ANOVA to see if they were associated with

Table 4

ANOVA Source and Mean Table for Father Groupings and Teacher Ratings of Academic Performance

Source	df	SS	MS	F
Groupings	5	82.9	16.58	3.865*
Error	53	227.4	4.37	
Total	58	310.30		

*p =.005

Least Square Means*

Paternal Teaching Profile	Teacher Ratings
High Verbal/Independence (VIND)	10.28
High Modeling/Independence (MIND)	10.00
High Independence (IND)	9.90
Low Verbal/Modeling/Independence (LOW)	9.16
High Modeling/Verbal (M+V)	8.75
High Verbal (VERB)	6.67

*Brackets attach significantly different (p <.01) pairwise comparisons (Tukey's HSD test).

variations in the academic performance/potential of their respective children, as rated by each childs' primary teacher. Table 4 does reveal significant differences ($F = 3.865$, $<.005$).

To control for the influence of child verbal intelligence on father teaching behaviors, the mean Peabody scores of children associated with each father profile were also compared via a one-way ANOVA. Ten Peabody scores were missing, so the ANOVA was first run on the 49 complete cases. Then the mean Peabody score was inserted into each missing case, and the ANOVA was run again including all 59 cases. In both instances the results were not significant ($F = .328$ and $F = .366$ respectively). Fathers apparently do not vary their teaching behaviors significantly with respect to their child's verbal intelligence. Mean Peabody scores of children associated with each paternal teaching profile are included in Table 3 for comparative purposes.

Two questions of interest arose in regards to the age of target children. First, were variances in teacher ratings associated with child age? If they were, the associations between paternal teaching profiles and teacher ratings could be spurious, especially if

significant age differences were found between the children associated with these profiles. Second, did Mexican-American fathers teach their children differently in respect to their age? If teaching patterns did vary in this regard, it might be possible to compare the efficacy of teaching styles at different age and grade levels (see Laosa, 1984).

Addressing the first question, Pearson product-moment correlations were conducted to assess the relationship of teacher ratings and child age. The results were not significant ($r = 0.08$), belaying the concern that child age compromised the achievement/teaching profile association.

To investigate whether fathers varied their teaching approaches with respect to age, means for child age were first calculated for each father profile. Using age as the independent variable, a one-way ANOVA was performed to see if significant differences in this variable existed between the six father groups. The F value was not significant ($F = .756$), indicating that there is not a significant relationship between the age of children in the sample and the teaching approaches fathers employ.

Post-hoc analysis (Table 4) of the six identified father teaching profiles was implemented in an effort to identify which of the groups differed significantly. Using the Tukey HSD test at .01 significance, two comparisons met this criteria. The high verbal (VERB) group of fathers had children who were rated significantly lower in school performance criteria by their primary teachers than children of high verbal + independence (V+IND) and high modeling + independence (M+IND) fathers. In addition the comparison between the performance ratings of children associated with high verbal only fathers and high independent only fathers (IND) approached significance at the .01 level. Out of all of the groups, children associated with fathers that emphasized verbal behaviors and independence training (V+IND) had the highest teacher ratings (M = 10.28) while children associated with fathers who taught verbally without promoting independence were rated the lowest (M = 6.67). Yet only slight differences are found between these two groups on mean Peabody scores (M = 99.4 and 92.3 respectively).

The three paternal groups associated with high independence training had the top three means in teacher

ratings of their children. Comparing childrens' teacher ratings between groups with high and low independence training reveals significantly higher scores associated with the high independence training recipients ($t = 3.014$, $p < .005$ $df = 28$).

Hypothesis #3

The third hypothesis involved the question of whether fathers' use of language in selected measures of home cognitive stimulation would vary with their years of education, and would be associated with variations in intelligence scores and teacher ratings of academic performance/potential of children.

The Cognitive Home Environment Scale (CHES) was administered to each father, as an overall measure of the amount of cognitive stimulation fathers provided to their children at home. Two items in this scale specifically ask whether the activity in question was carried out in English or Spanish. These items were; 1) did you teach your child to read (in Spanish? English?), 2) do you read to your child (in Spanish? English?). Parental involvement in reading to and teaching their child to read have been posited to be activities that foster verbal intelligence scores in children (Hess & Holloway, 1979). The intent of this hypothesis was to first determine whether fathers' varied the language they used in literacy related activities with respect to their level of education. Fathers' involvement in these activities was then compared in terms of whether the

Table 5
Father Groupings by Language on the
Cognitive Home Environment Scale

		Education level
1. (NONE) No teaching/reading	N=9 Peabody = 91.3 TRating = 8.2	3.78
2. (SPAN) Teaching/reading in Spanish only	N=15 Peabody = 83.5 TRating = 9.6	3.47
3. (ENGL) Teaching/reading in English only	N=20 Peabody =102.1 Trating = 9.2	12.50
4. (BLNG) Teaching/reading in Spanish & English	N=15 Peabody = 97.0 TRating = 9.3	7.87

Table 6
ANOVA Source and Means Table for CHES Language Groupings and Father Education Level

Source	df	SS	MS	F
Groupings	3	868.49	289.49	25.68*
Error	55	620.02	11.27	

* $p < .001$

Least Square Means*

Father CHES/Language Groupings	Father Education(Years)
(ENGL) Teach/Read in English only	12.50
(BLNG) Teach/Read in English and Spanish	7.87
(NONE) No Teaching/Reading to Child	3.78
(SPAN) Teach/Read in Spanish only	3.47

*Brackets attach significantly different ($p < .01$) pairwise comparisons (Tukeys HSD test).

language fathers used reading to and teaching their child to read had a mitigating effect on their childs' verbal intelligence or classroom performance.

Responses to these items placed fathers in one of four possible categorical groups; 1) fathers who did not read to their child or teach their child to read (NONE), 2) fathers who read to child and taught child to read in Spanish only (SPAN); 3) fathers who read to child and taught child to read in both Spanish and English (BILING) and; 4) fathers who read to child and taught child to read in English only (ENGL).

The number of fathers in each group and their mean education level are found in Table 5. These four groups were first compared via a one-way analysis of variance to investigate whether they were associated with different levels of father education. Table 6 reveals a highly significant relationship ($p < .001$) and demonstrates a clear trend of increasing use of English in home teaching activities as fathers' become more educated. A Tukey HSD post-hoc comparisons was completed to ascertain where significant differences were between the four groups. Brackets in Table 6 indicate significant comparisons. The (ENGL) fathers were significantly more educated than

Table 7
ANOVA Source and Means Table for CHES Language Groupings and Childs' Peabody Picture Vocabulary Test Scores

Source	df	SS	MS	F
Groupings	3	19.659	6.553	3.832*
Error	55	94.050	1.710	
Total	58	113.709		

*p =.015

Least Square Means

Father CHES/Language Grouping	Mean Peabody Score
(ENGL) Teach/Read in English only	102.1
(BLNG) Teach/Read in English and Spanish	97.0
(NONE) No Teaching or Reading to child	91.3
(SPAN) Teach/Read in Spanish only	83.5

*Brackets attach significantly different ($p < .05$) pairwise comparisons (Tukey's HSD test).

Table 8
ANOVA Source Table for CHES Language Groupings and Teachers' Rating of Child Academic Achievement

Source	df	SS	MS	F
Groupings	3	11.266	3.755	0.691*
Error	55	299.039	5.437	
Total	58	310.305		

*p =.562 (non-significant)

the other three groups. Fathers who taught/read in both languages (BILING) were more educated than both the Spanish and no teaching groups, although the differences were slightly less than the .01 criterion level of significance.

Children associated with each of the four language groups were then compared via two one-way ANOVAs on the dependent variables of mean Peabody scores and teacher ratings. Table 7 reveals significant differences do exist in our sample in Peabody scores between groups ($F= 3.832$, $p < .02$). Since in ten of the cases no Peabody score was recerded, an additional procedure was carried out before post-hoc testing could be implemented. First the overall mean (94.2) was inserted in the ten missing cases. Then as a crosscheck, the 49 complete cases were compared with a one-way ANOVA across the four groups. With the missing Peabody scores, group sizes were 15 (ENGL), 12 (SPAN), 9 (NONE) and 13 (BLNG). The differences in Peabody scores across groups were still significant ($F = 4.21$, $p = .01$). Post-hoc procedures were then carried out and least square means were compared in Table 7. Using an .05 criterion, Tukey HSD computations reveal that Peabody scores of children whose fathers

taught/read to them in English were significantly higher than those whose fathers taught/read to them exclusively in Spanish (brackets indicate significant differences).

Finally, the four groups were compared by way of the mean teacher ratings of children associated with each paternal group. Table 8 reveals no significant differences in school performance ratings ($F = .691$, $p = .562$). Children were doing equally well at school regardless of which language they were taught to read in and/or read to in. While differences are small, it is interesting to note the Spanish only group had the highest mean teacher ratings ($M = 9.60$), and the English only group was next to last ($M = 9.15$), with only the mean of the no teaching/reading group lower. This is almost the reverse of the Peabody outcome scores.

Hypothesis #4

The fourth hypothesis was designed to investigate whether the amount of father involvement in childcare related activities would vary with respect to his level of acculturation and would be associated with variations in teacher ratings of child school performance.

To investigate whether the amount of paternal involvement in childcare was related to their level of acculturation a Pearson product-moment correlation was conducted. Specifically this test gauged the relationship between father acculturation level (using the indice of generational status) and the total childcare involvement score of fathers as measured in the household activity scale (see procedures section). A moderate positive correlation was found between these two variables ($r = .257$). To investigate this relationship more thoroughly, fathers were split into two groups representative of their acculturation level. Using the established criteria for determining acculturation level (in procedures section) fathers were split into high and low acculturation groups. There were thirty-six fathers in the low acculturation group, and twenty-three met all criteria for high acculturation.

To test the hypothesis that fathers varied their level of involvement in childcare with respect to their level of acculturation, a t-test was performed comparing the two paternal groups on this measure. Table 9 reveals no significant differences between them ($t = 1.182$, $p = .242$). Comparing the means of the two groups does reveal that fathers slightly increase their involvement in childcare related responsibilities as they become acculturated. Mean involvement scores are 22.11 (low acculturation) and 24.26 (high acculturation) respectively.

Pearson correlations between teacher ratings and paternal involvement in childcare reveal no association ($r = 0.042$). Because of the low correlation, no further testing was carried out to investigate this part of the hypothesis.

Table 9
T-Test of Acculturation Level and Fathers' Childcare Involvement Scores

GROUP	N	MEAN	STANDARD DEVIATION
LOW ACCULTURATION	36	22.111	7.660
HIGH ACCULTURATION	23	24.261	5.198

POOLED VARIANCES T = 1.182 DF = 22
PROBABILITY = .242*

* non-significant

Hypothesis #5 states that fathers will vary their interaction on selected proximal variables of teaching strategies and amount of cognitive home stimulation in respect to the gender of the child.

Nine separate t-tests were run encompassing all paternal teaching behaviors to test the hypothesis that fathers vary these behaviors with respect to the gender of their child. Table 10 lists the means and standard deviations for each behavior by gender. Table 11 depicts the results of all nine t-tests, none of which reached the significance level of .05. Most of the means were very close, the exceptions being praise, verbal description and independence training. Girls received more praise and advice as a group then boys did. Boys were encouraged and allowed to work more independently as a group, which in our data is associated with academic success. However, none of the above disparities were significant.

To investigate variations in cognitive home stimulation activities along gender lines, fathers' overall CHES score were first summed. Totaled scores were then compared wuth respect to child gender by means of a t-test. Table 12 reveals that no differences were

found in the overall home cognitive stimulation provided by the father in respect to his childs' gender (t = .168).

Table 10
Mean Frequencies of Paternal Teaching Behaviors by Child Gender

1. Gender = Male
N = 28

	CI	PI	DS	PR	VC
MEAN	0.293	0.200	0.450	0.393	2.079
STANDARD DEV	0.444	0.293	0.507	0.535	1.377

	MD	VD	CM	IT
MEAN	0.793	0.707	1.257	1.121
STANDARD DEV	0.828	0.567	1.041	0.661

2. Gender = Female
N = 31

	CI	PI	DS	PR	VC
MEAN	0.213	0.148	0.439	0.581	2.045
STANDARD DEV	0.326	0.268	0.601	0.767	1.533

	MD	VD	CM	IT
MEAN	0.658	0.852	1.268	0.881
STANDARD DEV	0.825	0.598	0.996	0.560

CI = fathers' use of content inquiry.
PI = fathers' use of process inquiry.
DS = fathers' use of disapproval.
PR = fathers' use of praise.
VC = fathers' use of visual cue.
MD = fathers' use of modeling.
VD = fathers' use of verbal description.
CM = fathers' use of command.
IT = fathers' independence training behaviors.

Table 11
T-Tests Comparing Paternal Teaching Behaviors by Child Gender

SUMMARY STATISTICS FOR CONTENT INQUIRY Overall Mean = 0.251 Standard Deviation = 0.385 T STATISTIC = .794 PROBABILITY = .431
SUMMARY STATISTICS FOR PROCESS INQUIRY Overall Mean = 0.173 Standard Deviation = 0.280 T STATISTIC = .706 PROBABILITY = .483
SUMMARY STATISTICS FOR DISAPPROVAL Overall Mean = 0.444 Standard Deviation = 0.558 T STATISTIC = .078 PROBABILITY = .938
SUMMARY STATISTICS FOR PRAISE Overall Mean = 0.492 Standard Deviation = 0.667 T STATISTIC = 1.080 PROBABILITY = .285
SUMMARY STATISTICS FOR VISUAL CUE Overall Mean = 2.061 Standard Deviation = 1.449 T STATISTIC = .088 PROBABILITY = .930
SUMMARY STATISTICS FOR MODELING Overall Mean = 0.722 Standard Deviation = 0.822 T STATISTIC = .626 PROBABILITY = .534
SUMMARY STATISTICS FOR VERBAL DESCRIPTION Overall Mean = .783 Standard Deviation = 0.583 T STATISTIC = .950 PROBABILITY = .346
SUMMARY STATISTICS FOR COMMAND Overall Mean = 1.263 Standard Deviation = 1.0098 T STATISTIC = .040 PROBABILITY = .968
SUMMARY STATISTICS FOR INDEPENDENCE TRAINING Overall Mean = 0.995 Standard Deviation = 0.610 T STATISTIC = 1.514 PROBABILITY = .136

Table 12
T-Test of Fathers' CHES Scores by
Gender of Child

GROUP	N	MEAN	STANDARD DEVIATION
Males	28	15.536	6.680
Females	31	15.258	6.039

SEPARATE VARIANCES T = .167 DF = 54.7
PROBABILITY = .868
POOLED VARIANCES T = .168 DF = 57.0
PROBABILITY = .867

CHAPTER IV

Discussion

The purpose of the present study was twofold: 1) to gather field data on the proximal teaching and gender specific behaviors exhibited by Mexican-American fathers, in order to achieve a more complete and accurate understanding of the influence they may have on childrens' cognitive development; and 2) to investigate whether paternal roles in Mexican American families are changing as fathers become more acculturated, specifically in regards to their teaching behaviors utilized with their children, their use of English or Spanish in reading activities, and their involvement in childcare.

Results of the study indicate that wide variations exist between fathers in the sample in terms of their teaching approaches in task situations. Teaching profiles were identified that were found to be associated with variations in measures of their childrens' school performance. Fathers in the sample did not significantly vary their teaching behaviors or their level of involvement in cognitive home stimulation behaviors with respect to the gender of their child. Through investigating the influence of acculturation level on paternal roles and behaviors, variations were found

between this index and the use of specific teaching behaviors, and differences were found in the language fathers used with their children in literacy related activities. No significant variations were observed in fathers' level of involvement in childcare with respect to their level of acculturation, although high acculturated fathers were slightly more involved in these activities.

In the following section, the results of the five main hypotheses addressed in the study will be reviewed separately. Afterword, implications of the findings will be presented and limitations of the study will be considered.

Main Experimental Hypotheses

The five main hypotheses of this study involved (1) assessing the relationship between teaching behaviors Mexican-American fathers use with their child in tasks and their level of acculturation; (2) investigating whether distinct profiles comprised of paternal teaching behaviors could be identified and in turn whether these teaching profiles could be linked to significant variations in child measures of ability and achievement;

(3) gauging the impact of language used by fathers in home reading activities on achievement and intelligence scores in their children; (4) examining the relationship between acculturation level of fathers and their level of involvement in childcare, as well as whether variations in father childcare patterns were associated with child outcome measures; and (5) investigating whether fathers varied their teaching behaviors or amount of cognitive home stimulation with respect to the gender of their child.

Teaching Styles and Acculturation Level

The first hypothesis stated that variations in paternal teaching behaviors would exist with respect to fathers' level of acculturation. Behaviors exhibited by fathers in task situations with their child were coded using a revised version of the Maternal Teaching Observation Technique (MTOT). With revisions, including the addition of two new teaching categories, nine paternal behaviors were coded using this instrument. Pearson product moment correlations were performed in an effort to assess whether any association existed between each of the identified teaching behaviors and fathers'

level of acculturation. Results of these correlations lend support to this hypothesis. Two teaching styles emerged which were strongly associated with paternal level of acculturation. The first style of teaching mainly involved the use of verbal behaviors. Specifically these behaviors included command, visual cue, process inquiry, disapproval, and praise. Except for visual cue, these are verbal interactions, whereby the child is directly told what to do, asked what he/she is doing, or given feedback as to how he/she is doing. Visual cue consisted of father actions involving pointing to, lifting, or sliding a model part and was often accompanied by a verbal directive or question (i.e father slides wing to child and says "put this wing on next"). All of the five behaviors were highly correlated with each other ($p < .01$), and comprise a teaching orientation that can best be described as "direct" in nature. Fathers with more education/acculturation favored these direct, highly interactive behaviors.

In contrast, an alternative style of teaching was evident in fathers with low levels of acculturation. These fathers tended to teach through visual rather than verbal means. The paternal behavior of modeling (where

fathers visually demonstrated a model completion activity without providing verbal information was) was significantly associated with low acculturation fathers ($p < .05$). These fathers seemed less directive and intrusive in the task, and shared task decisions with their child. Evidence for this is the nearly significant association between low acculturation and independence training, a gauge of how much fathers encouraged and allowed their child to inititate autonomous task activities ($r = .23$). Perhaps due to the fact that low acculturation fathers often have had less education (Mean = 4.4 years) than their children, they tended to allow their children to make task-related decisions independently. In this way children were encouraged to take the initiative and share leadership in the task. While low acculturated fathers favored the teaching behavior of modeling and tended to promote child independence training, it was not clear from this correlational data whether they incorporated both behaviors conjointly or used predominently one or the other. Due to the very moderate correlation between independence training and modeling ($r = .15$), it appears that variations exist within this group of fathers in

terms of how they combined these behaviors.

Two child behaviors were coded, and correlations between them and paternal teaching behaviors yielded some interesting information. Children of high acculturation fathers asked for help in the task significantly more often than did children of low acculturation fathers. Additionally, very high correlations existed between child asking for help and the paternal behaviors of disapproval and command. Fathers who relied upon significant amounts of disapproval and command in past research have been depicted as highly authoritative parents (Baumrind, 1971; Radin & Epstein, 1982). The findings suggest that fathers who exhibit authority and "call the shots" in learning situations may raise children who learn to depend upon others for assistance. The ramifications of this authoritarian approach on child efficacy and school performance may be significant, and will be discussed in more detail when the implications of this study are considered.

In summary, high acculturated fathers tended to be highly interactive in the task and relied on mainly verbal means of instruction. Fathers with less acculturation modeled appropriate task behavior through

visual demonstration and were less interactive. Though not significant, it appeared that as a group more acculturated fathers were less likely to encourage their child to take initiatives and operate independently in father-child interactions. Strong negative associations were found specifically between evaluative and directive verbal paternal behaviors (i.e. praise, disapproval, visual cue, command) and independence training.

Paternal Teaching Styles and Child Measures of Ability and Achievement

The second hypothesis examined whether identified paternal teaching profiles were associated with variations in school performance ratings and verbal intelligence scores in children. As noted previously, through factor analysis of paternal task behaviors, three distinct clusters of teaching behaviors were identified (paternal behaviors considered direct, indirect and independence fostering). Via split-median analysis of these three factors it was possible to further identify six distinct paternal teaching approaches, which encompassed all three factors and certain combinations of factors (i.e. direct and independence training,

independence training only, etc.). Support for the hypothesis that children associated with each profile would vary in outcome measures was found in respect to classroom performance ratings, but not in terms of verbal intelligence scores. These findings were revealing in the following way. First, it was somewhat surprising that children from each of the respective groups were not found to differ in terms of their verbal intelligence. It seems logical that children of fathers who teach through predominently verbal means would have a larger vocabulary and more developed verbal comprehension skills than those children exposed to mainly visual, nonverbal teaching styles. However, comparing the mean Peabody scores of children taught through verbal and nonverbal behaviors revealed only slight, nonsignificant differences ($M = 95.80$ and 92.15 respectively). Thus, there appeared to be relative parity in verbal intelligence among children associated with each of the six paternal teaching profiles.

In contrast, paternal teaching profiles were tied to significant different classroom performance ratings ($p < .01$) in their respective children. A closer look at these variations reveals that dramatic differences in

school performance ratings exist between children associated with paternal profiles that incorporated independence training and those that did not. For example, fathers associated with direct and indirect profiles of teaching were linked to children with high teacher ratings only when independence training was incorporated in their teaching approach.

In an effort to understand the roots of this rather profound finding, the education level of fathers associated with each group was examined. Although largely of heuristic interest due to the post-hoc nature of this inquiry, some clues as to the relationship between paternal education level and their teaching approaches were evident. In the sample three variations of education level could be identified. Fathers educated only at the primary level were all schooled in Mexico. Fathers with more than primary education but who did not complete high school were schooled both in the U.S. and in Mexico. Finally, fathers with at least a high school education received it all in the United States. Fathers with only primary education (0-6 years) tended to use either independence training only (IND) or taught indirectly while promoting child independence (M+IND).

The fact that they allowed their children to operate with a high degree of autonomy may be due to the fact that this group of fathers often had less education than their child and therefore believed they were in no position to direct them in task situations. However, these fathers had children who were rated nearly as highly as children of the most highly educated fathers.

Fathers with some post-primary school but not a complete high school education (7-11 years) were associated with three of the identified father teaching profiles. These three approaches included a profile where little teaching of any kind occurred (LOW), a profile where fathers used direct teaching behaviors without promoting child independence (VERB), and a profile that combined direct and indirect teaching but did not promote independence in children (M+V). These moderately educated fathers tended to be either very directive or completely detached in tasks, and were associated with children in the sample who were rated the lowest by their primary teachers. It may be that since these fathers usually had more education then their child they believed they should take charge in the task. As a result, children exposed to direct or blended teaching

approaches got few opportunites to initiate actions or make task decisions. In the case of children of low teaching fathers, they were essentially ignored. Over time, children exposed to paternal profiles in which they are overtaught or undertaught (ignored) may develop a low estimation of their sense of efficacy. This is in response to a repeated message that they need assistance and are not capable, or in the case of undertaught children, perhaps not worthy of paternal effort and attention.

Finally, fathers with the most education (in the sample at least 12 years or more) were associated with the highest rated children. These fathers incorporated a verbal approach with high independence training and were represented strongly in the group that taught directly and promoted independence (V+IND). Fathers with the most education did not overteach or stifle their childs' mastery efforts. These fathers may have known from experience that learning is facilitated through personal trial and error, and to this end actively encouraged and fostered child-generated initiatives. What seems clear is that implicit paternal messages, through their teaching approaches, are transmitted to children in relation to

how capable they are considered to be. The impact of these messages may have profound effects on childrens' self-efficacy and performance, and differentially prepare them for success in academic arenas.

Paternal Home Reading Language, Education Level, and Child Outcome Measures

The third hypothesis that fathers vary the language used in reading to their child as well as teaching their child to read depending on their level of education was supported. Fathers who used Spanish in literacy related activities, as well as fathers who did not engage their children at all in these activities were associated with low education levels. As fathers became more educated they increased their use of English in these activities.

An attempt to find associations between paternal language used in literacy relevant activities and child outcome measures met with mixed results. Fathers who taught and read in English had children with significantly higher Peabody verbal intelligence scores than children of fathers who taught/read in both languages, who taught/read in Spanish only or who did no

teaching or reading. This result is consistent with previous research (e.g. Ben-Zeev, 1977) that has shown lower verbal intelligence scores in primary grade students who have been exposed to more than one language. Children in this age group (5-9 years in the sample) appear to be handicapped in terms of mastering an extensive vocabulary in either Spanish or English when there are demands to achieve fluency in both languages. At first glance it is possible to interpret these discrepancies in Peabody scores as an indictment against bilingual education. If learning to read and comprehend material in both English and Spanish is associated with poor verbal intelligence scores, it would seem likely that young children may be handicapped by this dual exposure. However, longitudinal efforts indicate that these deficits are developmental in nature, and appear to be largely mitigated by the fifth or sixth year of instruction (Troike, 1978).

In addition, it has not been established that age-limited vocabulary deficits translate into lower school performance. To investigate this possibility, teacher ratings of child school performance were compared with respect to the four identified paternal language

groups. No support was found that language in paternal literacy related activities was associated with variations in child school performance. Children exposed to Spanish in teaching and reading activities were actually rated somewhat higher than those exposed to English or both languages, although the differences were not significant. Clearly Spanish exposed children were doing at least as well in the classroom environment and were not handicapped in reference to their exposure to Spanish in home settings. The language fathers used in literacy related activities does not appear to differentially prepare children for success in the school environment. However, children exposed to Spanish only or both English and Spanish in reading and comprehension activities have more vocabulary to master than do English only children. In this respect, it makes sense that bilingual children will initially have less extensive vocabularies in either language than their monolingual counterparts.

Father Acculturation Level and Involvement in Childcare

The fourth hypothesis posited that fathers would vary their amount of involvement in childcare activities

relative to their level of acculturation. In addition it was predicted that child school performance ratings would be positively correlated with father childcare involvement levels. To test the first part of the hypothesis, the overall childcare involvement scores of high and low acculturation fathers were compared using a T-test. No support was found for the hypothesis that fathers would increase their involvement in childcare as they became more acculturated. To test whether teacher ratings of child school performance was associated with father involvement in childcare, Pearson product-moment correlations were performed. The very low correlations between these two variables indicated no support for the hypothesis. This finding is contrary to recent findings (Swick and Manning, 1983) that did report apparent links between father childcare involvement and child outcome measures.

While not significant, a closer look at the data does reveal that mean totals of childcare involvement were somewhat higher for high acculturated fathers than they were for low acculturated fathers. It may be that the level of paternal involvement in childcare is determined by factors not directly tied to

acculturation. For example, previous research has indicated that childcare responsibilities increase for fathers when mothers are employed, although mothers remain the prime caretaker (Berk & Berk, 1979). It also should be noted that fathers in the sample were identified as participants in an average of more than half of the forty childcare responsibilities, irrespective of acculturation level. However, there were large variations in total involvement scores between fathers, where out of 40 possible activities scores ranged from 2 to 36.

Upon close inspection of the activities listed in the childcare inventory, certain trends are evident with respect to paternal involvement. Fathers were most heavily engaged in activities that seemed intrinsically evaluative in nature. The three activities they exhibited the most involvement in were bringing treats to children, scolding children, and hugging/kissing children. About 95% of fathers in the sample partook of these activities. It appears that fathers took on the role of the prime rewarder as well as that of prime punisher in this sample of Mexican-American families. Fathers also were active in taking their children for

walks and to parks, watching television with them, listening to them, and keeping an eye on them. On the other hand, fathers did not tend to help out in childcare activities that might be considered menial in nature. They were least involved in activities requiring them to physically assist their children (i.e. dressing children, bathing children, washing their faces, brushing their teeth, changing their diapers and picking up their toys). On the average, only about 20% of fathers assisted in these activities. In addition, fathers made few arrangements for their children such as making doctor and dentist appointments or arranging for babysitters.

In summary, while fathers as a whole participated in a majority of childcare activities, they did not significantly increase their level of involvement as they became acculturated. Fathers in the sample were less involved in childcare behaviors requiring physical assistance, and tended to take on the role of rewarder or punisher with their children. In contrast to recent research extolling the benefits of increased paternal participation in childcare on child performance measures, (i.e. Swick & Manning, 1983) no associations of this kind were found in the study. It appears that

Mexican-American families keep traditional maternal and paternal roles relative to childcare fairly distinct as they are exposed to acculturation influences. Given the importance of both nuclear and extended families in the Hispanic culture (Alvirez & Bean, 1976), it makes sense that family roles would persist and not be easily diluted by role pattern changes in the majority culture. However, there is some indication in the sample that childcare roles are shifting in response to economic realities, irrespective of acculturation indices. It appears that largely due to economic necessities fathers may be becoming increasingly involved in childcare. As evidence, in the sample fathers with working spouses did take on more of the childcare responsibilities than fathers with non-working spouses, at a level approaching statistical significance (.05). It remains to be seen what implications this increased paternal involvement in childcare will have on child outcome measures.

Variations in Paternal Behaviors Associated with Child Gender

The fifth hypothesis posited that paternal teaching behaviors as well as the amount of cognitive

home stimulation fathers displayed would vary with respect to the gender of their child. To test the hypothesis that fathers teach their male and female children differently , a series of T-tests were performed comparing the raw frequencies of each of the nine paternal behaviors by gender. None of the paternal teaching behaviors was found to differ significantly in terms of child gender (at $p < .05$). Girls were given about 30% more praises than boys, which may indicate that fathers are warmer toward their female children than they are to their male children. This finding is consistent with similar studies that reported fathers as being warmer and less authoritative toward their daughters than toward their sons (Bronstein, 1984; Tauber, 1979).

In addition, fathers did promote independence training more often with sons than with daughters, although the differences did not reach significance. This disparity has also been identified in past research efforts, where fathers have been seen as more likely to promote child mastery behaviors in their sons than in their daughters (Block, 1979). The implications of these gender-specific paternal teaching behaviors are potentially broad, as they may differentially impact upon

childrens' sense of personal efficacy and translate into critical variations in child school performance measures.

The second part of the fifth hypothesis investigated whether fathers varied the amount of cognitive home stimulation (i.e. reading to, help with homework, teaching to read, etc.) they gave children with respect to their gender. To this end, a T-test was performed that compared the means of fathers' overall CHES scores between father-son and father-daugther groups. The hypothesis that fathers vary their involvement in home cognitive stimulation activities with respect to child gender was not supported. Fathers appear to equally carry out activities relevant to this scale regardless of child gender. Although no comparable studies have investigated this exact relationship, by inference it is somewhat suprising that Mexican-American fathers provide as much cognitive stimulation to daughters as they do toward sons. In light of the strong associative evidence that has shown Mexican-American fathers to be much more attentive and goal-oriented in task situations with sons then with daughters (Bronstein, 1984), it would seem to follow that these fathers would therefore not participate in as many activities tied to

cognitive stimulation (i.e. reading, homework help, teaching to read, etc) with their daughters as well. It may be, as suggested in the first part of this hypothesis, that it is the quality and not the quantity of father-child interactions that varies with respect to child gender. Fathers may, for example spend as much time helping their daughters on homework as they do their sons, but the nature of this help may be qualitatively different (i.e. more independence training with sons).

Limitations of the Present Study

There are time-honored debates in educational and psychological fields about the relative assets and liabilities of various research methodologies. Probably the most salient of these debates revolves around the issue of experimental rigor versus practical relevance. No experimental method is without its drawbacks - methods that tightly control against extraneous sources of error achieve high internal validity, but do a poor job predicting how or if their findings will be meaningful when applied to complex real world scenarios (Goldman, 1976). This research is usually analogue in nature, and achieves experimental "rigor" while sacrificing practical

"relevance". The opposite is true of field research - results of direct observations in naturally occuring scenarios have a high degree of external validity, and findings can often be generalized to comparable groups and situations. Field research, however is highly vulnerable to extraneous variables, and as such can be criticized as lacking internal validity. Due to this lack of rigor, it is much more difficult to attribute dependent variable effects to a given independent variable (Gelso, 1979).

Both types of research are ultimately valuable for their respective purposes. There is a danger, however of believing that what takes place in highly artificial situations approximates real life (Goldman, 1976). This concern is especially relevant for Mexican-American fathers, since the preponderance of research carried out on this group has been analogue in nature (Casas, Ponterotto & Gutierrez, 1986). Much needed field research has been sorely lacking, and popular charicatures and stereotypical views on Mexican-American fathers have prevailed in its absence (Buriel, 1975).

This research effort endeavored to collect field data relevant to Mexican-American fathers, in an attempt

to complement and balance the view of his role portrayed up until now by predominently analogue research. The findings are limited by the internal validity concerns intrinsic to field research, and should be interpreted with this qualification in mind. In addition, several other limitations need to be considered as well, and will be discussed in turn. These concerns have to do with sample limitations, father-child task limitations, and instrumentation limitation.

Sample Limitations

Although efforts were made to recruit families that were representative of the target neighborhood, the sample was not randomly selected. As a result, the relevance of the findings to the larger target population are difficult to assess. Several biases may have existed in the sample that could detract from its external validity. For example, parents who were highly invested in their childs' school performance may have been motivated to participate. On the other hand, it is possible that the study attracted parents whose children were doing poorly, in the hopes that participation in the project would give their child extra attention in the

classroom. The fact that many of the families were to some degree affiliated with Centro Familiar could be a source of bias. It is possible that families associated with an organization that provides daycare and family planning services may be functioning more effectively as a unit than families without such an association.

Given the fact that only 59 families were investigated in the study, the size of the sample is an additional concern. However, field research involving home visits are often much smaller in sample size than was the present study. Within-group comparisons further divided the sample into smaller and disproportionate subgroups, which further limits the generalizibility of the findings to populations outside of the sample.

The families excluded from analysis are another potential source of error, in that they could be categorically different from those included in the study. Six families were not included in the hypothesis testing due to the fact that videotapes of father-child tasks were not able to be coded. In four of these cases the fathers were not audible, either because they spoke too softly or due to faulty microphone placement. In the remaining two cases the video portion of the interaction

was of poor quality, and teaching behaviors could not be reliably coded. It is possible that excluded fathers taught differently than the fathers included in the study. However, since the omissions were caused mainly by experimenter error rather than in response to any subject characteristic, it is unlikely that this is a error source of significant magnitude.

Father-Child Task Limitations

The nature of the father-child task had several potential limitations that could affect the validity of the findings. The assumption that fathers' teaching behaviors are accurately represented in the task interactions is open to question. By taping the interaction unobtrusively and in the family home, it was hoped that fathers would relax and "be themselves" in the task. However, fathers may have played to the camera and altered their behavior with respect to knowing they were being observed and evaluated. The potential of error from this "Hawthorne effect" (Isaac & Michaels, 1981) was not possible to mitigate due to the fact that fathers were well aware of the purpose of the study and the fact that their behavior was being evaluated.

Another concern is with the nature of the instructions given to fathers before the task began. While all English speaking fathers were instructed to "teach" their children in any way they chose to, for Spanish speaking fathers the word "ensenar" was used to represent this idea. Other studies with Mexican-American mothers have shown that ensenar may be interpreted as meaning "to show", and therefore tended to elicit modeling behaviors on the part of the parent (Laosa, 1980). It is possible that the frequency of modeling behaviors was overrepresented in low acculturation fathers in the sample as a result, and the findings need to be interpreted with appropriate caution. Future research of this kind may want to use the Spanish verb "aprender" to represent the idea of teaching in task situations (Laosa, 1980).

Finally, there were potential sources of distraction during the task itself. There were at least three occasions were fathers briefly interacted with another family member who happened by, and in several of the interactions the television or radio could be heard in an adjoining room. These extraneous influences, although minimal in number could present limitations in

the findings. Sources of error tied to the MTOT coding device itself will be presented in the next section that discusses limitations surrounding the instruments used in the study.

Instrumentation Limitations

Several limitations are evident in the various instruments used in the study. A perennial problem for educational researchers has been the difficulty of accurately assessing and interpreting ability and achievement measures in minority children. This is due to the fact that most child outcome measures were normed on Anglo samples, and have been criticized as being culturally biased (Ponterotto, 1984). The criterion for selection of the instruments used in the study was that they had been previously and successfully used with Mexican American individuals. With the exception of the Household Activity Scale (which was a straightforward questionaire concerning the division of household and childcare tasks), all instruments met this criteria. However, except for the Peabody Picture Vocabulary Test, none of the instruments have been sufficiently assessed for content, concurrent or predictive validity. The teacher ratings for sample children were an entirely

subjective assessment of their class performance and academic potential. Because of this, results may be limited due to possible inflation of ratings, or high variability between teachers. It was deemed useful to include this measure as no alternative objective measure was available, and because it was thought that primary school teachers were in a unique position to assess their pupils' performance due to their daily interaction with them. Because of the above concerns with the validity of this dependent variable, the results need to be interpreted cautiously and may be primarily of heuristic value at this juncture.

In that new and redefined behaviors were developed to supplement existing MTOT categories, particular caution should be taken in interpreting the results collected from this instrument. The critical behavior of paternal independence training in part involved redefining child initiations into paternal behaviors, and is certainly open to other interpretations. One plausible rival interpretation is that children initiated acts irregardless of their fathers attitude toward this construct. However, there is evidence that suggests otherwise. First, fathers appeared to have much more

power in the task than children did. The children were actually a very docile group, as evident from the extremely low occurance of the child behavior of rejecting their fathers' command or advice (the average was less than one occurance per five-minute session). It was also apparent that virtually all children attempted to initiate acts, but fathers responded quite differently to these initiations. Fathers with high independence training scores as a rule did not intervene or intrude in response to child initiations, while fathers with low scores in this behavior tended to step in and take over control of the task. While every effort was made to accurately assess paternal behaviors that promoted child independence, it must be said that no completely satisfactory behavioral measure has been developed to date that gauges this construct. In summary, alternate interpretations need to be fully considered due to the hypothetical nature of the findings concerning independence training.

Finally, no causal interpretations concerning the study should be made due to the correlational nature of it's design. The independent variables (acculturation level, language in literacy activities, teaching

profiles, child gender) were not manipulated by the experimenter. As such, the fact that extraneous variables were poorly controlled presents some fairly serious concerns about the internal validity of each of the findings. It would be instructive to retest the significant hypotheses using analogue designs to see if similar findings are reported in well-controlled situations.

The rather daunting limitations presented in this report are inherent in field studies of this nature, particularly in those investigating Mexican-American families where few appropriately normed instruments are available. Despite these drawbacks, data from studies of this nature are invaluable first-hand looks at families and interaction patterns that promise to increase understanding of, and ultimately point toward solutions to long standing social and academic disparities.

Implication of the Present Study

There are several important implications researchers, educators, parents and counselors can glean from the results of the study. Perhaps the finding with the most significant implication is the apparent link

between paternal independence training and child school performance. There is a growing body of evidence consistent with the findings of this hypothesis which suggest that parental behaviors that promote child autonomy are translated into attitudes of personal efficacy. Hess & McDevitt (1984) discuss two ways that teaching strategies influence children. Teaching approaches in which parents are directive require little cognitive processing from children, who are asked to obey orders. However, when children are allowed to make their own decisions they are required to plot strategies, make discriminations, set goals, etc. In this way parental behaviors can serve a generative function for their childrens cognitive functioning. Secondly, when children work independently they tend to attribute the results to their own efforts or skills. Conversely, children of highly involved parents tend to attribute results to the person who is directing the task. This internal/external attribution quality is posited to be a key element in child self efficacy (Hess & McDevitt, 1984). High efficacy in turn is associated with expectations of success and is demonstrated behaviorally by persistent efforts and the ability to work without being distracted,

qualities that have been linked to successful classroom performance. More field and analogue research is needed to test this relationship, and certainly no conclusions can be drawn based on the evidence to date. However, this study indicates that research concerning the dimension of autonomy in parent-child interactions may provide highly relevant information for educators involved in early intervention programs.

Another potentially relevant finding was the within-group differences found in sample fathers, particularly in their approaches to teaching. This finding helps to dispel the prevailing characterization of Mexican-American fathers as a largely homogeneous group. Comparisons of paternal teaching patterns with respect to paternal acculturation level and years of education revealed significant diversity existed within sample fathers. Morever, associations between specific paternal behaviors and child outcome measures have many implications. For example, the apparent link between high paternal involvement and control in task situations and low child performance scores may have immediate practical value to educators. Since these counterproductive behaviors were associated with fathers with moderate levels of education, intervention training

efforts aimed at these fathers may prove to be particularly impactful. In addition, gender-typed paternal behaviors found in this study indicates that fathers may communicate very different messages to sons and daughters in terms of their ability make decisions and operate autonomously. The potential for these behaviors to "ripple" upon child self-efficacy may be great. Research into gender-typed proximal behaviors in the early home environment of children may illuminate ways to reeducate parents and teachers in this respect.

Teachers may benefit from the findings of this study, with respect to the link between acculturation level and parental teaching behaviors. There now is a consistent record that Mexican-American parents with low acculturation teach their children primarily through visual demonstrations (modeling). Teacher sensitivity to the kind of exposure children receive at home should help them to present material in ways that complement this exposure, and strive in this way to maximize the learning potential of children. Research involving the effective schools phenomenon reveals that high teacher achievement expectations for children, regardless of their background appears to be a common factor in successful programs

(Cohen, 1981). It appears that what behaviors such as independence training and high achievement expectations have in common is the efficacious message they bring to children - that they are inherently capable individuals.

Finally, the results of the study suggests that future research should account for paternal as well as maternal influences when assessing home environment variables and their impact on children. In addition to potential contributions of paternal teaching behaviors, distinct paternal influences may exist with regards to their involvement in childcare activities. Specifically, findings indicated that Mexican-American fathers appear to take on an a highly evaluative role with their children in terms of rewarding or punishing their behaviors. Many clinicians have noted that young children are apt to overgeneralize parental approval or criticism of their behavior, and take it to mean acceptance or rejection of themselves as individuals (Burns, 1980). Following this line of reasoning, fathers, due to the evaluative role they play may have a distinctive effect on their childrens developing sense of self efficacy. Since level of self efficacy has been posited as a central factor in aspects of social and

cognitive development, paternal behaviors may directly influence these constructs.

In summary, the present study has observed and investigated the teaching behaviors and family involvement patterns of Mexican-American fathers, and attempted to make preliminary connections between variations in these behaviors and roles and child outcome criteria. It is hoped that the field data generated as a result of this study, as well as the findings themselves will be of heuristic and practical value to researchers and educators committed to the goal of equal and full educational opportunity for all members of society.

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APPENDIX A

Maternal Teaching Observation Technique (Revised)

CODING CRITERION FOR MATERNAL TEACHING OBSERVATION TECHNIQUE (REVISED)

CONTENT INQUIRY - father asks specific question to child related to task. A model part or part characteristic (color, size, shape) must be named or referred to.
Ex: Where does the red piece go? Where is the wing?

PROCESS INQUIRY - father asks child question relevant to sequence or strategy decisions.
Ex: What goes next? How do you want to begin?

DISAPPROVAL - father verbal indication of disapproval of child action, or of child him/herself.
Ex: No, that is not right. No, dummy.

PRAISE - father verbal indication of approval of child action or of child him/herself. Do not include minimal encouragers, only obvious expressions of praise.
Ex: Good! You're doing great! Alright!

VISUAL CUE - father physically manipulates model or model piece in the following manner a) sliding - pushing or pulling model or model piece toward or away from child; b) lifting - picking model or model piece up (ground to ground = one cue); c) pointing - fully extending finger at model, model part or diagram. ** Peripheral activities, such as taking pieces out of tray or lifting pieces when child not observing do not qualify.

MODELING - father physically puts model together as child observes. One behavior coded each time two parts are fastened or unfastened. DON'T CODE VISUAL CUE-LIFTING IF IT TURNS INTO MODELING!!

VERBAL DESCRIPTION - father suggestion, hint or advice related to task.
Ex: you might need a smaller piece there. The wheels need to go on the bottom.

COMMAND - father directive, where child is told to pursue an action in regards to the task.
Ex: Turn it over. Put the blue piece in the hole.

INDEPENDENCE TRAINING - either; a) father verbal statement encouraging child to make task decisions - Ex: Go ahead, you can do it by yourself, or b) child action of fastening or unfastening of model parts while father observes. DO NOT CODE CHILD ACTION AS INDEPENDENCE TRAINING IF ACT IS A RESPONSE TO PATERNAL QUESTION, HINT, COMMAND, DEMONSTRATION, OR VISUAL CUE. Child initiation must be unsolicited, and father MUST be observing. Count each unsolicited fastening or unfastening as one independent act.

APPENDIX B

MTOT (Revised) Coding Schemata

VD - verbal description
IP - process inquiry
IC - content inquiry
C - verbal content
DS - disapproval with specific feedback
DN - disapproval/no feedback
P - verbal praise
PF - praise/following indep act

V - visual cue
VF - visual cue following request for help
M - modeling
MF - modeling following request for help

CA - child asks for help, info
CR - child rejects help, info
CI - child independent act

CIRCLE → SON DAUGHTER

TAPE NUMBER ____

Father's Verbal Behavior	Father's Nonverbal Behavior	Child's Behavior

Behavior	#	Total Time
Inquiry-(C)		
Inquiry-(P)		
Disapproval/w		
Disapproval/w/o		
Praise		
Praise follow		

Behavior	#	Total Time
Visual cue		
VC follow		
Modeling		
Modeling following		
Verb.Descr.		
Command		

Behavior	#	Total
Child asks		
Ch.rejects		
Child's independent act		

APPENDIX C

Parents Background Form

PARENT'S BACKGROUND FORM

1. Where were you born?_____ [10] [1 = U.S.; 2 = MEX]

1a. What kind of community was it? [11]
1.___rural/farming
2.___small town
3.___large town
4.___small city
5.___large city
6.___metropolis (e.g. L.A.)

2. Until what age did you live there? _____

3. Where did you live after that? _____

3a. Until what age? _____

[12-16] 3b. What kind of community was it? _____

4. Where did you live after that? _____

4a. Until what age? _____

4b. What kind of community was it?_____

5. Where did you live after that? _____

5a. Until what age? _____

5b. What kind of community was it?_____

6. How many years of education have you had? _____
[17-18]

6a. Where were you educated? _____
[19]

(FOR PARENTS BORN IN MEXICO)

7. Why did you come (stay) to the U.S.?
[20]

1.___chance/luck/destiny/followed parents or spouse
2.___for survival/to avoid persecution or unemployment
3.___for a better life for self or children
4.___other (WRITE IN) _____
9.___don't know

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8. Where was your father born? _____ [21] (1 = U.S.; 2 = MEXICO)

8a. Where was he raised? _____ [22]

8b. What kind of place was this? _____

8c. What was his occupation? _____ [23-25]

9. Where was your mother born? _____ [26]

9a. Where was she raised? _____

9b. What kind of place was this? _____ [27]

9c. What was her occupation? _____ [28-30]

(FOR PARENTS BORN IN THE U.S.)

10. When did your father come to the U.S. (year)? _____ [31-33]

10a. How old was he? _____ [33]

10b. Why did he come? [34]

1. ____ chance/luck/destiny/followed his parents
2. ____ survival/to find job/avoid prosecution/avoid unemployment
3. ____ for betterment of own or children's life
4. ____ other (WRITE IN ANSWER) _____
9. ____ don't know, don't remember

11. When did your mother come to the U.S. (year)? _____ [35-36]

11a. How old was she? _____ [37] (1 = Child; 2 = Adult)

11b. Why did she come? [38]

1. ____ chance/luck/destiny/followed parents or husband
2. ____ survival/to find job/avoid prosecution/avoid unemployment
3. ____ for a better life for self or children
4. ____ other (WRITE IN ANSWER) _____
9. ____ don't know, don't remember

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(FOR ALL PARENTS)

12. There are different names that people of Mexican background use to identify themselves.
[39] When you think of yourself, do you think of yourself as:

1.___Mexican
2.___Mexican-American
3.___Chicano
4.___American of Mexican descent
5.___American
6.___Hispanic
7.___Latino
8.___Something else

13. What did your parents think of themselves as: Your mother?_____ [40] Your father?_____ [41]

14. Do you ever think of going to live in Mexico? 1.___Yes 2.___No 3.___qualified yes
[42] 4.___qualified no

15. When you think of your mother's (father's) life and compare it to yours, in what way is your life different than hers/his?_____
[43] _____
[44] _____
[45] _____

16. In what way would you like your children's life to be different from yours? _____
[46] _____
[47] _____
[48] _____

APPENDIX D

Academic Performance Rating Scale

ACADEMIC PERFORMANCE -- TEACHER'S PERSPECTIVE

1. How would you evaluate this child's overall skills and knowledge compared to other children in this class?

   Excellent ___ Good ___ Fair ___ Poor ___ 34 ☐

2. Overall, how has this child been doing? _____

   _____ 35 ☐

   _____

3. How would you evaluate his/her academic potential?

   Very high ___ High ___ Average ___ Low ___ Very low ___ 36 ☐

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APPENDIX E

Cognitive Home Environment Scale

COGNITIVE HOME ENVIRONMENT ITEMS

F/M-WRT-N 48 ☐

1. Did you teach _____ to write (his/her) name? 0.___NO
[48] 1.___YES

F/M-CNT-ENG 49 ☐
F/M-CNT-SP 50 ☐

b. To count? 0.___NO 1.___YES
In English? [49] 0.___NO 1.___YES
In Spanish? [50] 0.___NO 1.___YES

F/M-RD-EN 51 ☐
F/M-RD-SP 52 ☐

c. To read? 0.___NO 1.___YES
In English? [51] 0.___NO 1.___YES
In Spanish? [52] 0.___NO 1.___YES

F/M-HLP-LRN 53 ☐

d. [53] All together, how much time do you (or your husband) spend trying to help _____ learn?

F/M-PLAY 54 ☐

e. Do you play with _____? [54] 0.___NO 1.___YES

0 = no
1 = no specific instance, vague
2 = one instance mentioned
3 = 2+

f. What do you play?

2. Do you read books to _____? 0.___NO 1.___YES

F/M-RD-ENG 55 ☐
F/M-RD-SP 56 ☐

In English? [55] 0.___NO 1.___YES
In Spanish? [56] 0.___NO 1.___YES

F/M-BOOKS 57 ☐

b. [57] If yes, what kind?

0 = no
1 = no specific mention/vague
2 = one mention
3 = 2+

c. [58] How often do you read to (him)?
0 = never
5 = every day
4 = every other day
3 = once a week
1 = less than once a week

F/M-RD-FR 58 ☐
F/M-DO-OTH 59 ☐
Count # mentioned

3. What other things do you do with _____?
[59]

APPENDIX F

Household Activity Scale

A Third Interview: HOUSEHOLD ACTIVITY CARDS (continued)

30.	Wake up children	Despertar los niños
31.	Dress children	Vestir los niños
32.	Diaper children	Cambiar zapetas
33.	Feed children breakfast	Dar el desayuno a los niños
34.	Feed children lunch	Dar loncho a los niños
35.	Feed children dinner	Dar de cenar a los niños
36.	Supervise children at meals	Supervisar los niños durante comidas
37.	Wash faces & brush teeth of children	Limpiar la cara y los dientes de los niños
38.	Bathe children	Bañar los niños
39.	Put children to bed	Acostar los niños
40.	Plan children's activities	Planear actividades de niños
41.	Pick up toys	Recoger juguetes
42.	Buy children's clothes	Comprar ropa de niños
43.	Supervise children's chores	Dirigir los quehaceres de niños
44.	Intervene in child's fights	Intervenir en pleito de niños
45.	Take privileges away from children	Quitar privilegios a los niños
46.	Bribe the children	Recomponsar los niños
47.	Scold children	Regañar a los niños
48.	Spank children	Pegar a los niños
49.	Bring treats to children	Traer colocinas para niños
50.	Hug and kiss children	Dar cariños a los niños
51.	Talk with school teachers or principals	Hablar con maestros y directores
52.	Go to PTA's, Open House/School	Participar en funciones escolares...P.T.A.
53.	Help children with homework	Ayudar niños con tarea
54.	Keep an eye on children	Vigilar los niños
55.	Watch children while the other works	Cuidar los niños mientras esposo(a) trabaja
56.	Watch children while the other is out...shopping or visiting	Cuidar los niños mientras esposo(a) va de compras o visita
57.	Entertain children while doing other things	Entretener los niños mientras haciendo otras cosas
58.	Play with children while doing nothing else	Jugar con los niños mientras haciendo nada mas.

59.	Take children to school/baby-sitter	Llevar niños a la escuela o con niñora
60.	Take/drive children to doctor/ dentist	Llevar los niños con doctor o dentista
61.	Take/drive children to friends or other activities	Llevar los niños con amigos o a otras actividades
62.	Take children for walks, to parks, etc.	Sacar los ninos a un paseo, al parque... etc.
63.	Arrange for children's doctor and dental appointments	Arreglar citas de doctor y dentista para los niños
64.	Arrange for babysitter	Arreglar asuntos de cuida-niños
65.	Pick up/take back babysitter	Recoger o dejar la niñera
66.	Listen to children	Poner atención a los niños
67.	Read books to children	Leer a los niños
68.	Watch television with children	Mirar televisión con los niños
69.	Tell children stories	Contarlos cuentos